GuideTRAX V3.2
(HR)
User Manual

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GuideTRAX V3 User Manual

Written for GuideTRAX Version 3.2

Publication Date, April 2007

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TABLE of CONTENTS

GuideTRAX V3

1 Introduction 1

1.1 This Manual 4

1.2 The Saturn Series 5

1.3 GuideTRAX V3 6

1.3.1 Saturn HL Version 6

1.3.2 Saturn HT Version 6

1.3.3 Saturn HR Version 7

2 Getting Started 9

2.1 Starting the System 12

2.2 The Startup Screen 13

2.3 The Main Screen 14

2.4 Map Screen 16

2.5 Virtual Road Window 17

2.6 Status Bar 19

2.6.1 AutoSTEER Button 21

2.7 GPS Status Indicator 22

2.7.1 GPS Status Window 23

2.8 Registering the System 25

2.9 Setting Up The First Time 26

2.9.1 Setting The Season, Client, Farm and Driver 26

2.9.2 Selecting the Current Job Details 27

2.9.3 Setting Up Vehicles 28

2.9.4 Setting Up The Boom 31

2.9.5 Setting Up The Tank 32

2.9.6 Setting Up Master And Section Switches 32

2.10 Connecting the GPS 34

2.11 Recording a Treatment 35

3 Vehicles & Booms 37

3.1 Configuring The Vehicle 40

3.1.1 Tractor 40

3.1.2 Articulated Tractor 41

3.1.3 Self Propelled Sprayer 42

3.2 Configuring The Towed Implement 43

3.2.1 Pig Trailer 43

3.2.2 Dog Trailer 44

3.3 Configuring the Rig 45

3.3.1 Configuring the Boom Settings (Swath Width) 45

4 Fields & Virtual Memory 47

4.1 Virtual Memory 49

4.2 Setting Up the Season, Client, Farms and Fields 50
4.3 Starting a New Field 51
4.4 Saving a Field 52
4.5 Viewing Field Information 53
4.6 Unarchiving An Archived Field 54
4.7 Transferring and Backing Up Saved Fields 55

5 Using Guidance 57
5.1 Creating a Guideline 60
5.1.1 Parallel Guidance 61
5.1.2 Racetrack (Lock) Guidance 63
5.1.3 Contour Lines Method 65
5.2 Replay Guidance 67
5.2.1 Loading a Treatment File To Be Replayed 67
5.2.2 Setting Up RePLAY Guidance 68
5.3 Guidance information 69
5.3.1 Virtual Road Information 69
5.3.2 Lightbar 70
5.4 Guidelines and offsets 72
5.4.1 Guide Overlap 72
5.4.2 Guide Offset 73

6 Customising the System 75
6.1 Enabling Options By Password 77
6.2 GPS Configurations 78
6.2.1 Defaults 78
6.2.2 Changing the GPS Settings 78
6.2.3 Using e-Dif (Optional Extra) 80
6.3 Guidance Information 81
6.3.1 Heads Up/North Up 81
6.3.2 Zooming In and Out While Driving 82
6.3.3 Virtual Road 82
6.3.4 Lightbar 83
6.4 The Screen 85
6.4.1 Night Mode 85
6.4.2 Grid 85
6.4.3 Measurement Units 85
6.4.4 Position Units 85
6.4.5 Field Colour 86
6.4.6 Status Bar 86
6.5 AutoFIELD 87
6.5.1 The Background Map 87
6.5.2 Treat Unmapped Field 88
6.6 Turning Treatment Recording ON and OFF 89
6.6.1 The RINEX Toggle Switch 89
6.6.2 Using Touch Instead Of a Switch 91

6.6.3 Connecting Directly to a Third Party Controller 91
6.7 The RINEX Button Box (Optional Extra)....92
6.8 The RINEX Foot Switch (Optional Extra) 93
6.9 The Multi Section Boom Interface (Optional Extra) 96
6.9.1 Installation 96
6.9.2 Enabling the MSBI....96

7 Using Record Keeping Functions 99
7.1 Common Record Keeping Tasks....101
7.1.1 Creating and Loading a Treatment Plan....101
7.1.2 Using Default Plans....104
7.1.3 Editing a Plan 105
7.1.4 Filling The Tank....106
7.1.5 Dumping The Tank....109
7.1.6 Creating a Product Batch 110
7.1.7 Importing Plans Created In The Office 112
7.1.8 Exporting Data To The Office....112
7.1.9 Creating a Weather Record....113
7.1.10 Using Flags....114
7.2 Driver Setup 115
7.2.1 Creating and Selecting a Driver....115
7.3 Viewing Treatment History 117
7.3.1 Viewing a Saved Treatment 117
7.3.2 Viewing a Farm Map and Creating Pages....118
7.3.3 Creating and Selecting a Filter 119
7.4 Creating Products....120
7.5 AutoFIELD....121
7.5.1 Mapping....121

8 The Menu System....125
8.1 Menu Layout 128
8.2 The Main Menu 130
8.2.1 View....131
8.2.2 Field....132
8.2.3 FieldNET....135
8.2.4 Guide....139
8.3 General Setup 147
8.3.1 About GuideTRAX....151
8.3.2 Current Job....153
8.3.3 AutoSTEER 157
8.3.4 AutoFIELD....158
8.3.5 Display Setup 159
8.3.6 Vehicle Setup 162
8.3.7 AutoSPRAY 179
8.3.8 Transfer Files....181
8.3.9 Guide Options....182
8.3.10 Lightbar Setup 184

8.3.11 Virtual Road Setup 186
8.3.12 GPS Setup 188
8.3.13 Remote Buttons 190
8.3.14 Sound Setup 192
8.3.15 Memory Setup 194
8.3.16 FieldNET Setup 212
8.4 Records 213
8.4.1 Tank Menu 214
8.4.2 Weather Menu 233
8.4.3 Flags 239
8.4.4 History 240

9 AutoSPRAY 255
9.1 AutoSPRAY Overview 258
9.2 Configuring AutoSPRAY 258
9.2.1 Enabling the AutoSPRAY Option 259
9.2.2 Setting AutoSPRAY Overlap 260
9.2.3 Setting AutoSPRAY Latency Values 260
9.2.4 AutoSPRAY Section Translation 264
9.3 Using AutoSPRAY in the Field 266
9.3.1 Overriding AutoSPRAY 268
9.3.2 AutoSPRAY Status Messages 271

10 AutoSTEER 273
10.1 Setting up AutoSTEER 276
10.1.1 Selecting the AutoSTEER Controller 276
10.1.2 Enabling AutoSTEER 277
10.2 Engaging AutoSTEER 279
10.2.1 Disengaging AutoSTEER 280
10.3 The AutoSTEER Status Button 281

11 FieldNET 283
11.1 What is FieldNET 285
11.2 Setting Up FieldNET 286
11.2.1 Hardware Installation 286
11.2.2 Creating and Setting The Group ID 287
11.2.3 Configuring FieldNET 289
11.3 Using FieldNET 290
11.3.1 Connecting To Another Vehicle In The Group 290
11.3.2 Understanding the LINK TYPE 291
11.3.3 Changing the LINK TYPE 292
11.3.4 Understanding The Status Of Other Vehicles 293

12 The Launcher 295
12.1 Opening the Launcher 298
12.2 Using the Launcher 300
12.2.1 Launcher Main Menu 301

12.2.2 System Tools 303
12.2.3 Utilities 305
12.2.4 GPS Tools 306
12.2.5 RINEX Tools 308

13 APPENDIX 311

TABLE of CONTENTS

1

Introduction

GPS guidance systems allow agricultural machinery to be far more productive by providing accurate and real time information for vehicle navigation and placement of product. Specifically the RINEX guidance systems provide an easy to use interface through the colour touch screen for vehicle guidance. The system may be used for any agricultural task which requires vehicle navigation, particularly for applications or treatment of chemicals and/or fertilisers and seeds.

Treated areas can be seen on the screen as the vehicle is working, providing a continuous guidance display with additional information relating to the field and treatment. The RINEX guidance system records information until it is manually cleared so operations can be interrupted if necessary, and completed at a later date.

GuideTRAX V3 has been developed by RINEX primarily for vehicle guidance in agricultural applications. In addition to this GuideTRAX V3 can be configured for control of automated steering systems and/or automated boom section control.

GuideTRAX has evolved over many years and the release of GuideTRAX V3 software heralds a new era with the addition of field planning and data management modules to further enhance the guidance software.

GuideTRAX V3 is configured for three different user levels. The system, depending upon purchase is configured as either a HL, HT, or HR model. Each model is described in a separate manual.

Accordingly this manual is specifically designed to assist users of the Saturn guidance systems in the operational use of GuideTRAX V3 HR software.

1.1 This Manual

This manual is designed for use with the Saturn HR model guidance system as manufactured by RINEX.

This manual will refer to buttons which appear on the screen. The screen is touch sensitive, which means that the system is operated by touching the buttons on the screen. The user should touch the button on the screen with their finger to select the button.

This manual will adopt the following conventions when describing the selection of a button or a series of buttons in order to access a particular function or section of the program.

A button on the screen refers to icons or images that appear on the screen. An example of a button is shown in Figure 1-1.

Figure 1-1 The FIELD button

FIELD Refers to the FIELD button as illustrated in Figure 1-1.

When it is necessary to locate a particular part of the GuideTRAX V3 program by touching a number of buttons this will be referred to as "Access" and show the necessary buttons to touch in order to access the function starting from the Main Menu.

Access: **SETUP** **ABOUT GUIDETRAX** **REGISTER**

1.2 The Saturn Series

RINEX manufacture a variety of guidance and control systems, including the Saturn series of guidance systems. The series has evolved over the years as development in computer technology has also evolved.

GuideTRAX V3 software was designed specifically to operate on the Saturn H series which incorporates an intelligent power supply with an embedded Windows® operating system. Specifications for the Saturn H series are provided in Appendix 2.

The Saturn H series guidance systems automatically control the power position according to the vehicle ignition status which means that the guidance system is operational when the vehicle is running and inactive (OFF) when the vehicle is shutdown.

1.3 GuideTRAX V3

GuideTRAX V3 is designed to provide one easy to use interface which can accommodate different user requirements as necessary. RINEX recognizes that many users want their systems to grow with their requirements, which is exactly how GuideTRAX V3 is designed to operate. GuideTRAX V3 is a modular system that has 3 main levels of operation which are all built on a common hardware platform. All GuideTRAX V3 systems can operate with any level and type of GPS positioning from RTK to a stand alone GPS. A user can purchase an entry level system that can be expanded in the future to accommodate more advanced data management features as well as the options of AutoSPRAY, AutoSTEER and FieldNET. The following sections describe the features and assets of each version of GuideTRAX V3

1.3.1 Saturn HL Version

The Saturn HL is designed as an entry level guidance system. The HL incorporates the same guidance functions as found on the higher level versions including parallel, racetrack and contour guidance and is built on the same common hardware platform. Furthermore it provides the same functionality for vehicle modelling as found in the other versions and still allows for many optional features to be added at a later date. The HL offers a large full colour touch panel screen with a moving map display, and has the most simple and intuitive operator interface on the market.

Primarily the HL is designed to allow users to purchase a fully featured guidance system which is economically priced and totally upgradeable for the future.

1.3.2 Saturn HT Version

The Saturn HT is designed for the user who requires an easy to use guidance system which can include the options of automated steering control and automated boom section control. The HT provides the user with the most advanced guidance functions provided on any system throughout the world. The user can choose and swap between Parallel, Lock or RePLAY guidance in any field with the touch of a button. The HT will allow the user to permanently save fields to memory, which can then be exported to an office program very simply, using a USB memory stick.

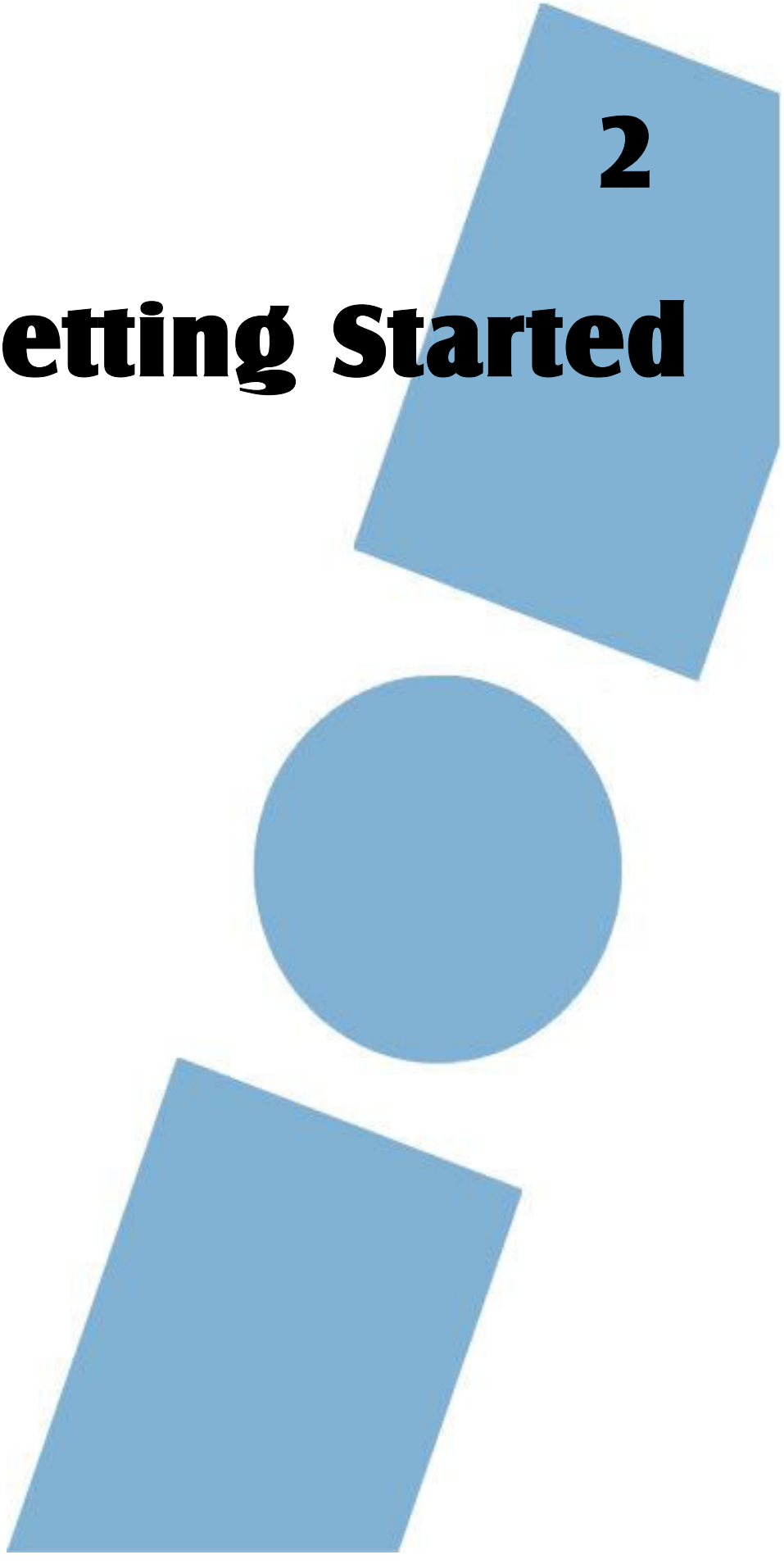
The HT can be configured with the optional modules of AutoSPRAY, AutoSTEER and FieldNET, most other RINEX peripherals can be added, or the HT can be upgraded to the Saturn HR.

1.3.3 Saturn HR Version

The Saturn HR is designed for the user who wants a complete guidance package but requires full record management functions and integration with farm mapping and QA programs. The HR is PLANCENTRIC which is a total system where season plans can be designed, transferred to the vehicle for application, record application data then export back to office programs for archiving. HR brings AutoFIELD recognition and a range of new features that allows important information to be recorded without any user involvement. The HR is the only system for complete data integration with PAM software or the supplied RINEX Office package. The HR can be configured with the optional modules of AutoSPRAY, AutoSTEER and FieldNET, making it the world's smartest guidance system.

2

Getting Started



GuideTRAX V3 operates on colour touch screen. Hence to access any function on the system it is a simple case of touching or tapping the screen on the appropriate button.

The RINEX screen is a 22cm (diagonal measurement), or an optional 27cm, which should be securely attached to the vehicle in accordance with the installation manual.

This section describes the correct way in which to power the system ON and OFF and the various parts of the screen that both displays and allows the user to enter information into the system. Understanding the terminology of the various parts of the screen is important as the manual refers to these parts when describing the functions of the guidance system.

This section also details how to correctly configure the Saturn H system prior to use for the first time.

It is recommended that all users, including users of earlier RINEX systems, read this section to familiarise themselves with the operation of GuideTRAX V3.

First time users of RINEX guidance systems are encouraged to read the entire manual to ensure that they are aware of the many features provided on the Saturn H system with GuideTRAX V3 software.

2.1 Starting the System

Prior to starting with this manual the guidance system should be completely installed into the vehicle in accordance with the instructions in the installation manual.

1) Turn the Isolation Power Switch (IPS) on the Interface Box to the ON position (-). This will not immediately power the system as the vehicle ignition must also be ON. See Figure 2-1 to locate the IPS.

2) With the IPS on the Interface Box in the ON position, start the vehicle and leave the engine running. The Saturn guidance system will start to power on after a short period.

3) Whilst the system is starting the screen will display information pertaining to the onboard computer system. This is the normal starting sequence and can be ignored. Once the system finishes loading GuideTRAX V3 the Main screen will be displayed and the system is ready for operation.

Figure 2-1 : The Saturn H interface box & Isolation Power Switch

In normal operation, leave the Isolation Power Switch (IPS) on the Interface Box in the ON position (-) at all times.

4) To shut the Saturn H system OFF turn the vehicle ignition off. This will power down the Saturn H system. The IPS should not be switched to the OFF position.

Hints and Tips:

- *Do not turn the system off by turning the IPS to the OFF position on the interface box. Shutting down the system in this way may cause the loss of important system information.*
- *It is possible that the system will start to the Launcher menu and not GuideTRAX V3 Main Screen if the system was shutdown incorrectly. In this situation select the option **Start GuideTRAX** to move to the Main Screen.*

2.2 The Startup Screen

As the system is starting up, it will display the two screens shown in Figure 2-2 and Figure 2-3 below:

Figure 2-2: The RINEX First Startup Screen

Figure 2-3: GuideTRAX V3.2 (HR) Startup Screen

The GuideTRAX V3 startup screen displays the model (HR) and version (3.2) of software. It also shows whether the AutoSPRAY, AutoSTEER or AutoFIELD options are enabled on your system.

2.3 The Main Screen

The Main Screen is the next screen that will be displayed and is shown in Figure 2-4. Its functionality is described in detail in this manual.

The screen is touch sensitive, which means that the system is operated by touching the buttons on the screen. The user should touch the button on the screen with their finger to select the button.

Under no circumstances should any sharp implement or excessive force be used to touch the screen.

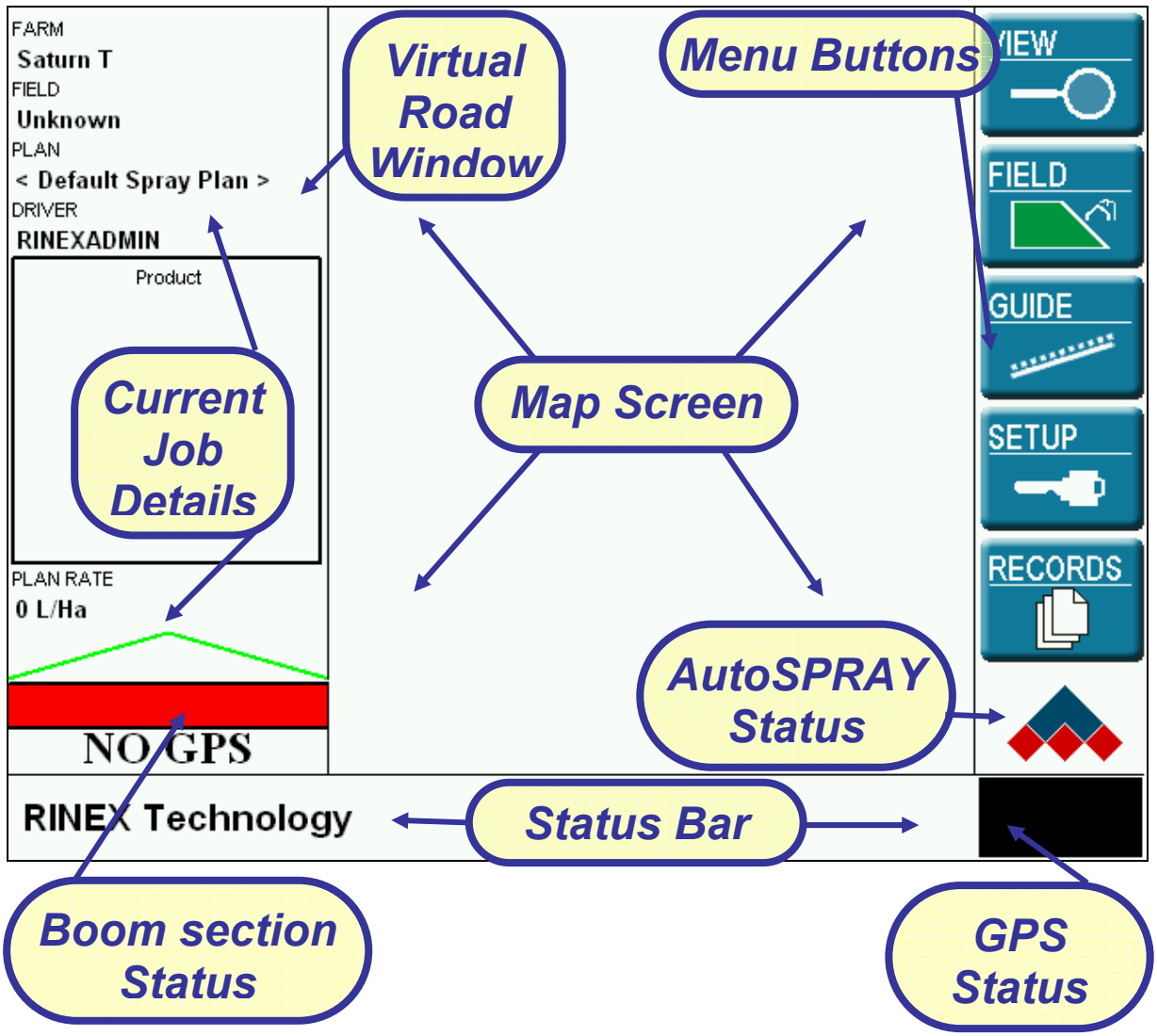


Figure 2-4: The Main Screen

Overview: The main screen displays the following information.

Item	Description
Map Screen	The Map Screen occupies the greater part of the overall screen and displays the treated area as a map view.
Virtual Road Window	The Virtual Road Window on the left hand side of the screen can be toggled ON or OFF. If guidance is not activated the screen will not display a Virtual Road. If the vehicle is stationary, the Virtual Road will be replaced by details of the current job. Touching on the Virtual Road Window while moving will toggle between the details and the road view.
Status Bar	The Status Bar is located at the bottom of the main screen. It can be toggled to display status information relating to the field and system.
GPS Status	The GPS Status Indicator is used to display the current GPS status. A visual alarm will be displayed if the GPS does not conform to the setup parameters.
Menu Buttons	The Menu Buttons are displayed on the right hand side of the screen. The buttons will change as sub-menus are selected for operation.
Boom Section Status	The Boom Section Status displays the ON / OFF status of one or more boom sections dependant upon the configuration of the system.
AutoSPRAY STATUS	The AutoSPRAY logo will be displayed if the software has the AutoSPRAY option enabled. Four different colours indicate AutoSPRAY status: GREY: AutoSPRAY is enabled but is currently off. RED: AutoSPRAY is on but there is a hardware error. ORANGE: AutoSPRAY is on but override is activated. GREEN: AutoSPRAY is on and working. The AutoSPRAY status logo when pressed will display the AutoSPRAY Override menu.

Hints and Tips:

- *The Main Screen may vary dependant upon the options configured on the system.*

2.4 Map Screen

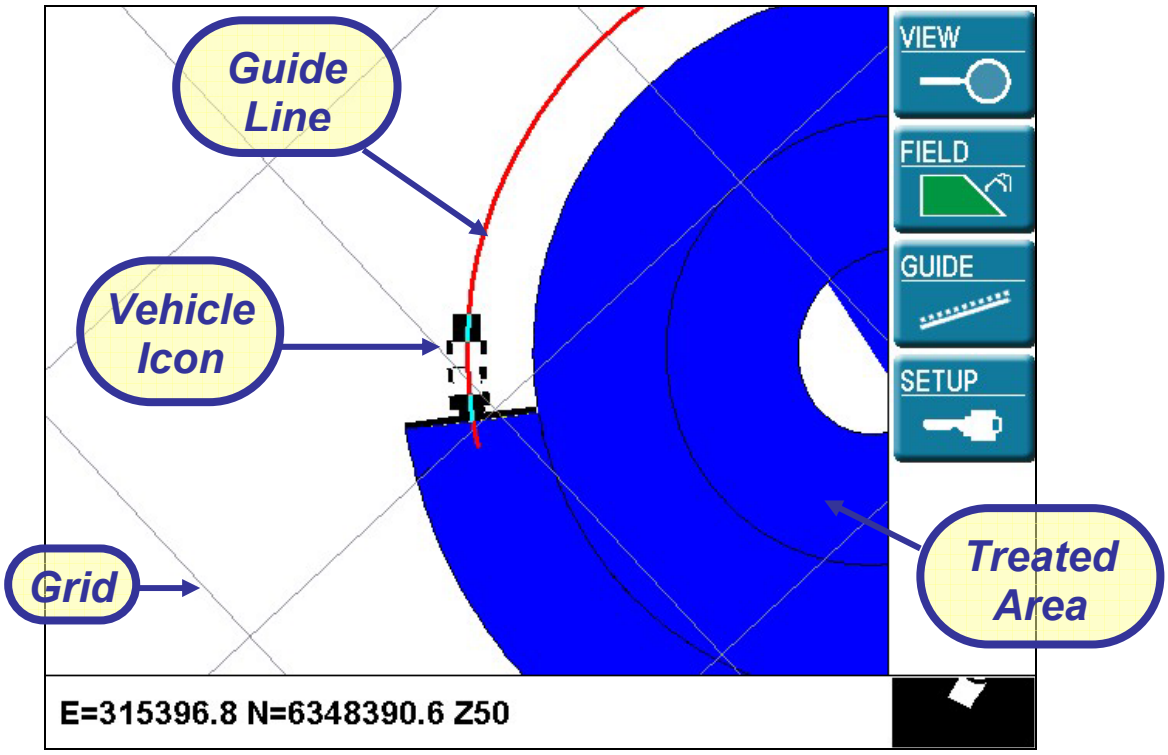


Figure 2-5: A typical Map Screen

Overview: The Map screen displays the following components:

Item	Description
Vehicle Icon	The Vehicle Icon represents the position of the rig in relationship to the treated areas. The Vehicle Icon will show all links that make up the current rig.
Guideline	A guideline will be displayed when either Lock, Parallel or RePLAY guidance is activated. The guideline is represented by a solid red line on the Map Screen that is used to guide the vehicle around the field.
Treated Area	When treatment is on, the treated area is recorded. This is then displayed on the Map Screen and is represented as the blue shaded area on the screen.
Grid	When the grid is on, grid lines will be displayed on the Map Screen. The grid lines run in a north-south, east-west direction.

2.5 Virtual Road Window

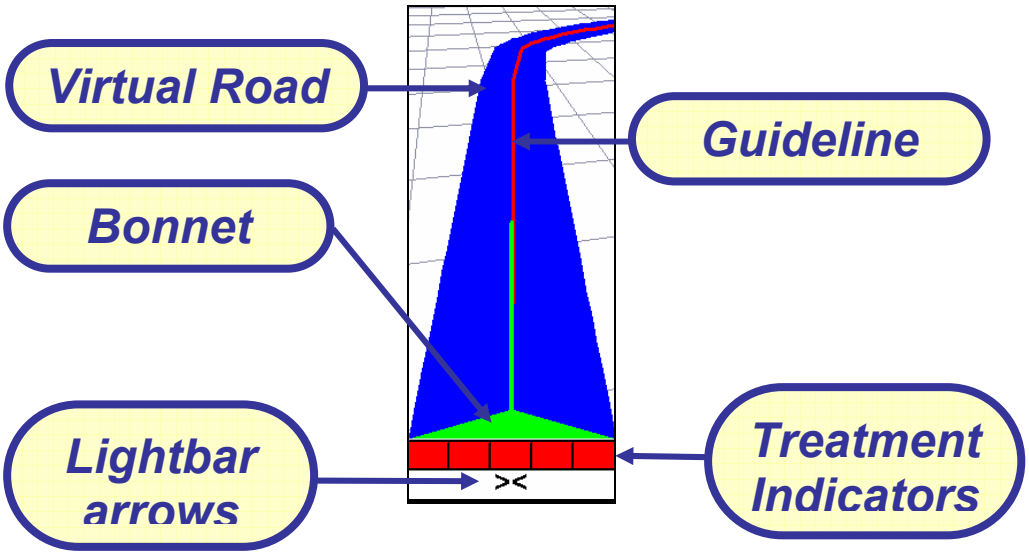


Figure 2-6: A typical Virtual Road Window

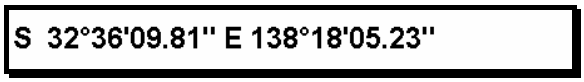
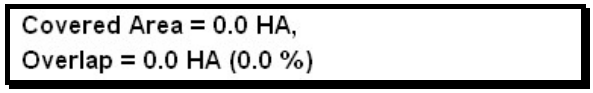
Overview: The Virtual Road Window is designed to represent a road from the position of driver looking across the bonnet to the guideline.

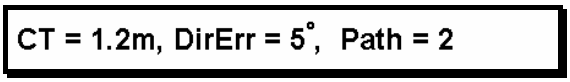
Item	Description
Virtual Road	The Virtual Road is represented by the blue roadway in the window. The Virtual Road does not represent the actual swath width of the boom, but rather the central portion of the swath.
Guideline	The guideline is represented by the red line in the centre of the blue Virtual Road.
Vehicle Bonnet	The green triangle in the Virtual Road window represents the front bonnet of a vehicle. The elongated line from the bonnet shows the vehicle alignment in relationship to the guideline. When the triangle is filled solid green it indicates that treatment recording is ON.
Treatment Indicators	The treatment indicator displays the number and current status of sections on a boom. A box filled red indicates that the section is ON, a blank box (white) indicates the section is OFF.

Item	Description
Lightbar Arrows	The lightbar arrows are displayed below the treatment indicators once guidance has been activated. The lightbar arrows indicate the distance from the vehicle to the guideline.
Grid	A grid will be displayed in the Virtual Road Window.

2.6 Status Bar

Overview: The Status Bar displays system status information as shown below. These messages can be set to be visible or invisible – see Section 8.3.5.1.

Item	Description
Position	 This displays the current position of the vehicle.
Area	 This displays the current treated area. When one lap of the paddock has been completed, the total encompassed area will also be shown. If FieldNET is ON, the total area treated by all the vehicles in the group will also be displayed as the FieldNET Area.
Area To Go	 This displays the total area minus the treated area.
Field / Vehicle	 This displays the number of the selected memory slot and the implement swath width.
Speed	 This displays the current vehicle speed.
% Overlap	 This displays the area covered and percentage of overlapped area in the current field. The covered area + overlap area approximately equals the treated area.

Item	Description
Guide Status	 This displays how many guidelines the vehicle is from the original guideline, and also whether the current guideline is to the left or right of the original guideline (or AB points).
Controller Info	 This displays information from a Third Party Controller if connected. If using touch or a RINEX toggle switch then it displays Manual.
AutoSTEER Info	 This display option is available when AutoSTEER is ON. It displays information about AutoSTEER status according to which AutoSTEER controller is installed.
AutoSPRAY Status	 This displays whether AutoSPRAY is connected and if so, whether ON or OFF. It also displays whether AutoSPRAY Override is ON or OFF.
Tank Volume	 This displays how much product is left in the tank, and the total tank capacity (volume).
FieldNET Status	 Each box represents the current status of all other linked vehicles working in the area at any one time. A flashing antenna symbol (as shown in middle box) indicates that vehicle is in contact with your vehicle. See Section 11.3.4 for more information.

2.6.1 AutoSTEER Button

Overview: The AutoSTEER Button is displayed on the Status Bar when the option is enabled. The AutoSTEER button displays and controls the status of AutoSTEER. See Section 10.3 for more information.

2.7 GPS Status Indicator

Overview: The GPS Status Indicator displays the current status of the GPS or alarms. The indicator also selects the GPS Info window for additional GPS information. The states of the GPS Status Indicator are listed in the table below:

Icon	Description
	The satellite symbol scrolling through the icon indicates good GPS.
	The **DØ** alarm indicates good GPS, however the GPS is not corrected in any way (GPS only).
	The **ØG** alarm indicates poor GPS which is differentially corrected.
	The **DØG** alarm indicates no GPS.
	A totally blank GPS Status indicates that no data is being received at the GPS port.
	The View Mode indicates that GPS data is not used. The system will be in View Mode when the Field Menu is accessed.

2.7.1 GPS Status Window

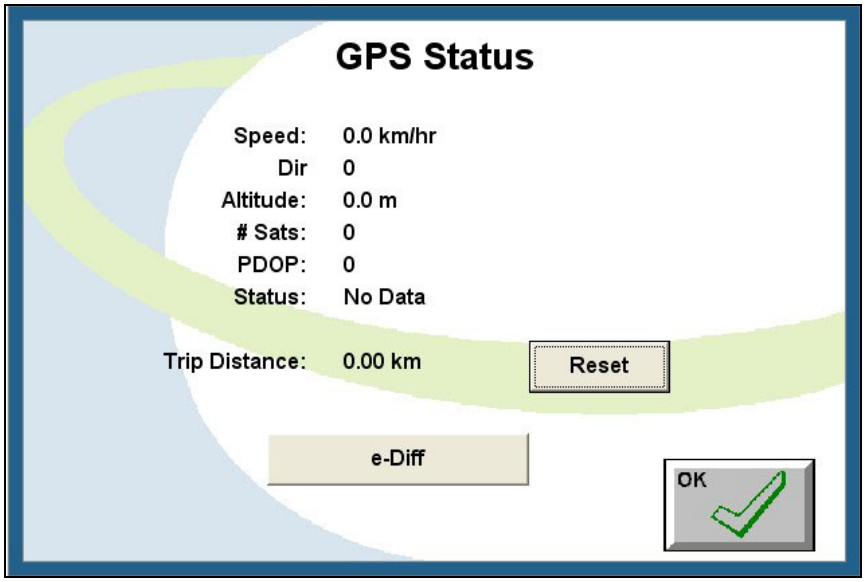


Figure 2-7: The GPS Info Window

Overview: The GPS STATUS window displays information related to the GPS. It displays information computed from the GPS.

Name	Function
GPS INFO	The GPS information displayed is detailed as; • Speed: The current vehicle speed. • Dir: The current vehicle direction displayed as an azimuth (angle relative to North). • PDOP: The PDOP (Position Dilution of Precision) is a measure of the positioning quality. The PDOP value should be less than 4 for accurate positioning. • Altitude: The altitude of the vehicle above sea level. • # Sats: The number of GPS satellites observed. • Status: Displays the current GPS status, also indicated by the GPS Status Icon.
Trip Distance	The trip distance is an odometer as recorded by GPS.
Reset	The Reset button resets the trip distance back to 0.00Km.

Name	Function
e-Dif	The e-Dif button (optional purchase) turns differential mode off and swaps the MiniMAX receiver from marine beacon to e-Dif mode and calibrates it.
OK	The OK button closes the GPS Status window.

2.8 Registering the System

The Saturn H guidance system is configured for specific user requirements via a password. Hence prior to use the system must be configured with the correct code to register the options on the system.

The system has been supplied from RINEX with a password in accordance with the options ordered at time of purchase.

The six character code must be entered in the REGISTER window.

Access: **SETUP** **ABOUT GUIDETRAX** **REGISTER**

The password will be supplied with the following information;

- Serial number of the Saturn H interface controller unit
- Compact Flash Identification Number (CFID)

If the supplied information does not match the CFID, contact RINEX or their Authorised dealer as the password will not function.

2.9 Setting Up The First Time

The following list of settings must be set for correct guidance and mapping prior to using GuideTRAX V3. These parameters must be set each time the system is moved between vehicles. Failure to set these parameters correctly may provide incorrect guidance and mapping information.

2.9.1 Setting The Season

The Season will automatically be set to the current calendar year when GuideTRAX V3 is first started. If this is not the desired season then the selection can be changed.

Access: **SETUP** **MORE** **MEMORY SETUP**

1) Touch **SEASON** **NEW**

2) A warning message will be displayed stating that all treatments for the current season must be completed. As this is the first time the system has been used, touch **OK**.

3) Type in the new season (usually the current calendar year) using the on-screen keyboard and touch **OK** **BACK** **BACK**

2.9.2 Adding Client, Farm and Driver Names

Access: **SETUP** **MORE** **MEMORY SETUP**

1) Touch **CLIENT / FARM** **CLIENT** **NEW**

2) Type in the name of the client using the on-screen keyboard and touch **OK** **SELECT**

3) Touch **FARM** **NEW**

4) Type in the name of the farm using the on-screen keyboard and touch **OK** **BACK**

5) Touch **DRIVER** **NEW**

6) Type in the driver's name using the on-screen keyboard and touch **OK**.

7) Touch the User Level button to set it to Low, Medium or High.

   - **Low Level:** The driver cannot change most vehicle, guidance or records settings on the system. However, the driver still has access to enough functions to allow him/her to use GuideTRAX V3 to use guidance and record field treatment information.
   - **Medium Level:** The driver can change most settings on the system, but cannot delete most records, change the system's registration code or driver setup, add high level drivers or view or change product cost information.
   - **High Level:** The driver has access to all functions.

8) Touch the Password button and use the on screen keyboard to set the driver's password, and touch **OK**

9) Touch **ACCEPT** **BACK** **BACK** **BACK**

2.9.3 Selecting the Current Job Details

How to setup Clients, Farms and Drivers was described in Section 2.9.2 however they still need to be selected for the Current Job.

1) Touch **CURRENT JOB** to display the Current Job window.

2) Touch **DRIVER** select the driver name from the list and touch **SELECT**. If required, enter the password and touch **OK**

3) Touch **CLIENT** select the client name from the list and touch **SELECT**

4) The first farm in the list for the chosen client will be selected, if a different farm is required touch **FARM**, select the farm name from the list and touch **SELECT** **BACK**

The currently selected Client, Farm and Season shown on the Current Job window will be used as the location to store the treatment data. The Drive logged in will be used to determine the active security level.

2.9.4 Setting Up Vehicles

Prior to using the Saturn H system for the first time it is necessary to setup information pertaining to the vehicle and peripherals including the boom and its sections.

Access: **SETUP** **VEHICLE SETUP** **LINK SETUP**

The default Link Setup list screen will be displayed as shown in Figure 2-8.

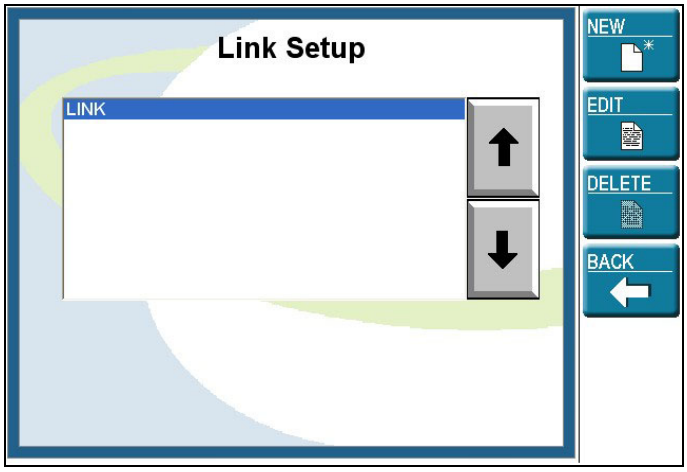
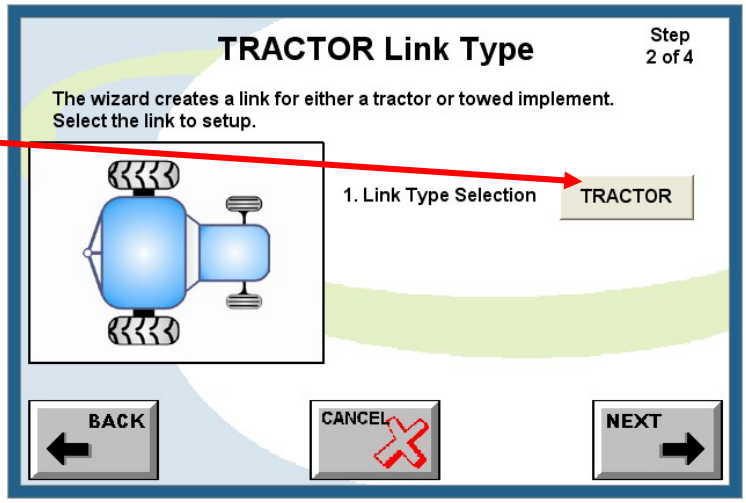


Figure 2-8: Default Link Setup Screen

1) Press **NEW** to enter a new vehicle. Type in the new link name (usually the tractor or implement model) using the on-screen keyboard and touch **NEXT**.

2) Select whether this link is a Tractor, Articulated Tractor, or Implement by touching the **TRACTOR** button.

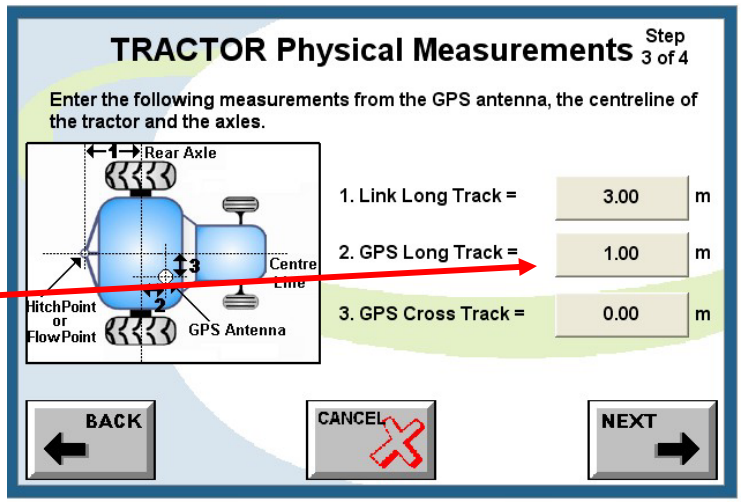
3) Touch **NEXT**



Hints and Tips:

- *The vehicle or machine which has the GPS receiver/antenna installed on it must always be set as the TRACTOR or ARTICULATED.*

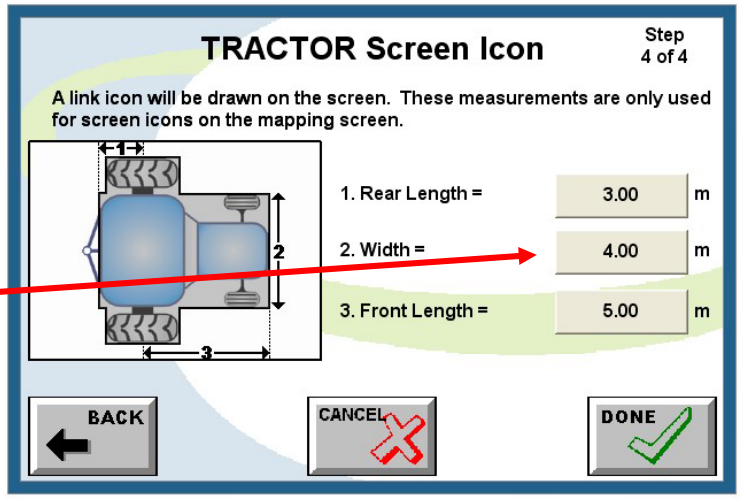
4) For each of the Physical Measurements shown on the screen measure corresponding distances on the tractor or implement and touch the corresponding button on the screen.


TRACTOR Physical Measurements
Step 3 of 4
Enter the following measurements from the GPS antenna, the centreline of the tractor and the axles.
Rear Axle
Centre Line
HitchPoint or FlowPoint
GPS Antenna
1. Link Long Track = 3.00 m
2. GPS Long Track = 1.00 m
3. GPS Cross Track = 0.00 m
BACK
CANCEL
NEXT

5) Type in the measurement using the on-screen keyboard, then touch **OK**.

6) When all the measurements for this window have been entered touch **NEXT**.

7) For each of the Screen Icon measurements shown on the screen measure corresponding distances on the tractor or implement touch the corresponding button on the screen.


TRACTOR Screen Icon
Step 4 of 4
A link icon will be drawn on the screen. These measurements are only used for screen icons on the mapping screen.
1. Rear Length = 3.00 m
2. Width = 4.00 m
3. Front Length = 5.00 m
BACK
CANCEL
DONE

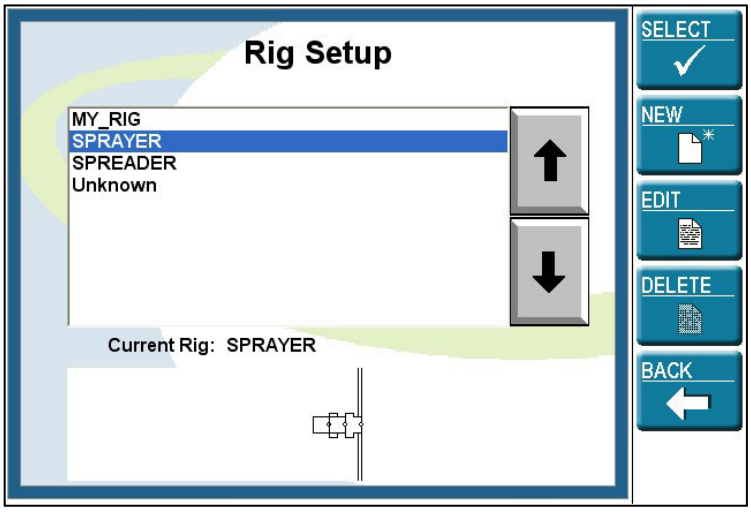
8) Type in the measurement using the on-screen keyboard, then touch **OK**.

9) When all the measurements for this window have been entered touch **DONE**.

10) If another link needs to be created, touch **NEW** and repeat steps 1 to 9 for as many links (tractors or towed implements) as necessary.

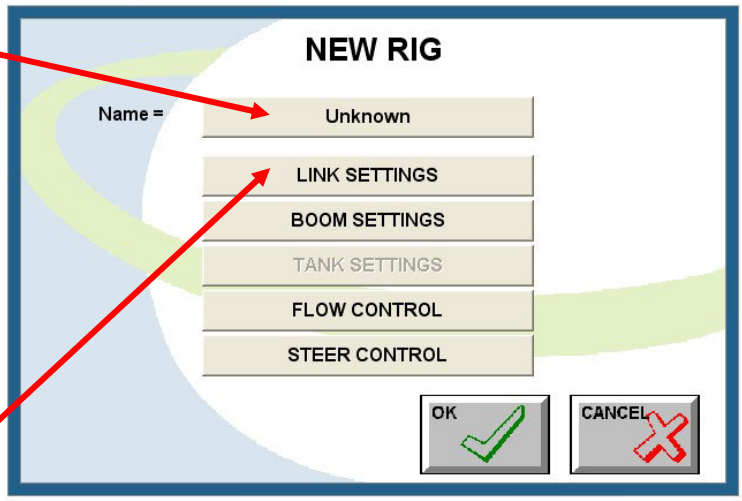
11) Touch **BACK** and then touch the **RIG SETUP** button.

12) Touch **NEW**.



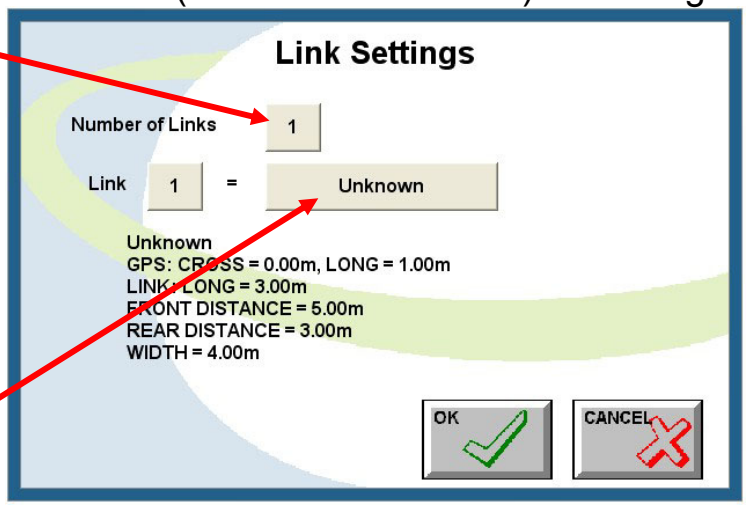
13) Touch the "Name =" button and enter the name of the rig (usually something which will represent the function of the rig, e.g. "Sprayer") then touch **OK**.

14) Touch the **LINK SETTINGS** button.



15) Touch the Number Of Links button (total number of links) and using the ↑ ↓ buttons select the total number of links that will be used in the rig, then touch **OK**.

16) Touch the **UNKNOWN** button, then using the ↑ ↓ buttons select the first link to be used in the rig, then touch **OK**.

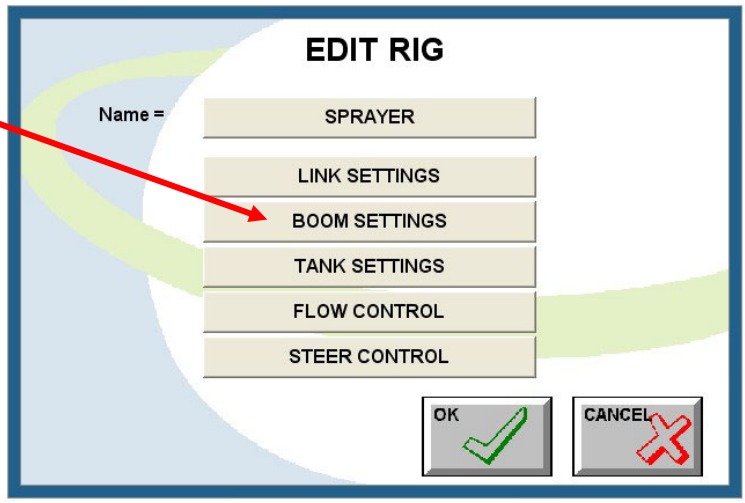


17) If necessary touch the Link (number) button to move to the next link in the rig and repeat step 16).

18) When all links for this rig have been included in the correct order, touch **OK**.

2.9.5 Setting Up The Boom

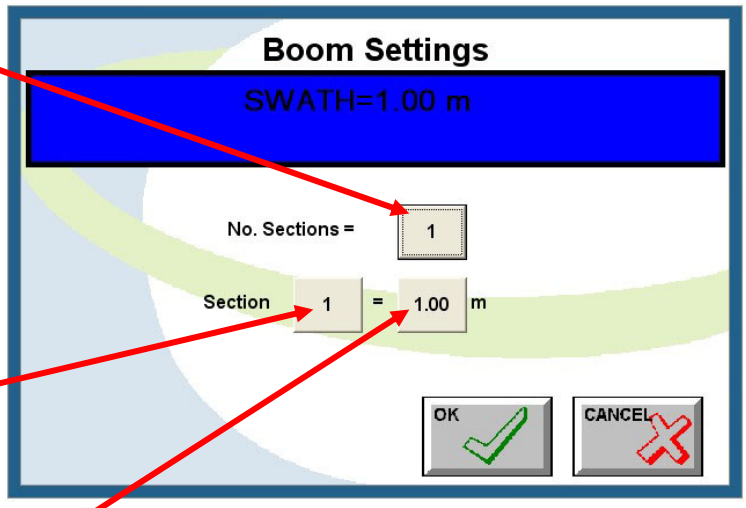
1) Touch the **BOOM SETTINGS** button.



2) Touch the No. Sections button

3) Use the ↑ and ↓ buttons to select the total number of sections that will be used on the boom, then touch **OK**

4) Touch the Section button to select each section.



5) Touch the section width button to set the width of each section.

6) Use the on-screen keyboard to type in the width of the selected section and touch **OK**

7) Repeat steps 4 to 6 until all section widths have been set. The total swath width is displayed at the top of the screen.

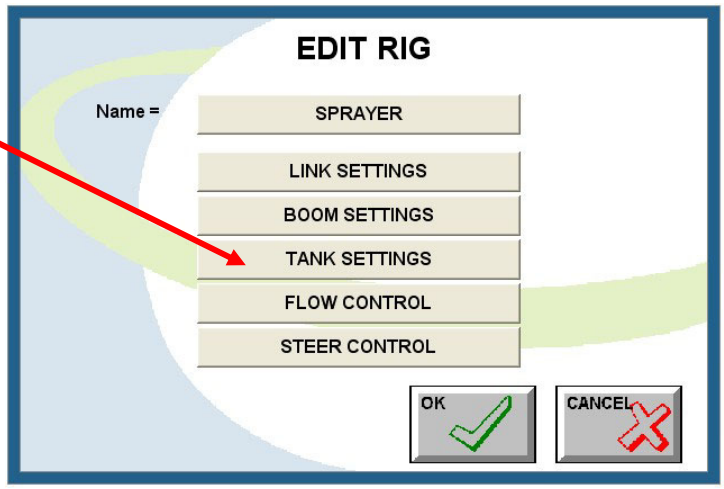
Hints and Tips:

- *If you do not have AutoSPRAY (see Section 9) or a Multi-Section Boom Interface (see Section 6.9) or any spray controller listed in the Flow Controller list, then you may find it more convenient to set the number of sections to 1 and treat the whole boom as just one large section.*

8) Touch **OK** when boom settings are complete.

2.9.6 Setting Up The Tank

1) Touch the **TANK SETTINGS** button.

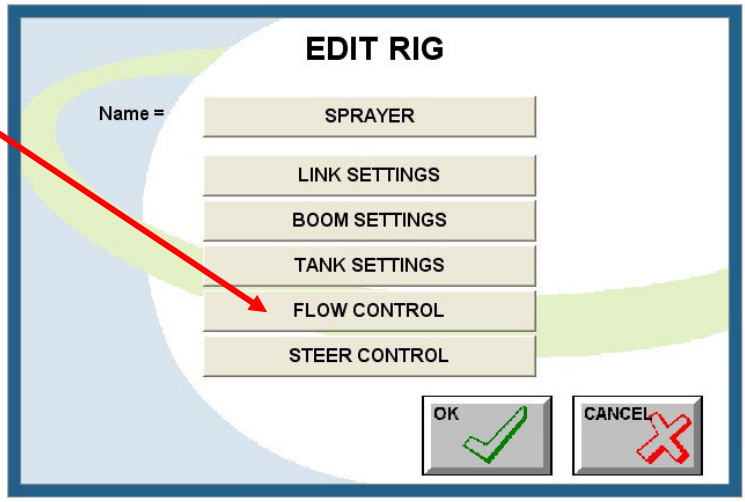


2) Touch the Tank button

3) Use the on-screen keyboard to type in the volume of the tank and touch **OK** **OK**

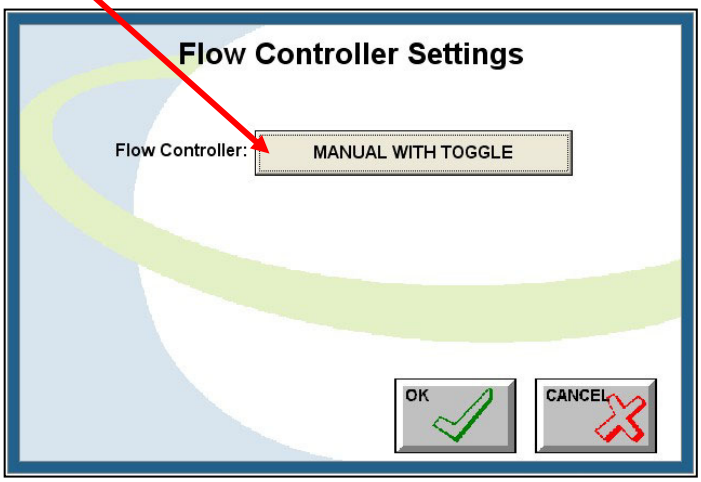
2.9.7 Setting Up Master And Section Switches

1) Touch the **FLOW CONTROL** button.



2) Touch the Flow Controller button

3) Using the ↑ ↓ buttons to select the spray or spread controller or method which will be used for turning treatment recording on and off.



4) Touch **ACCEPT**.

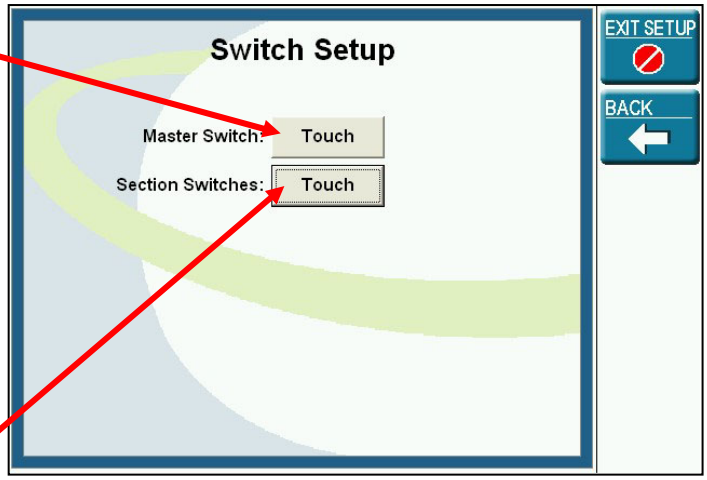
5) Touch **OK** **OK**

Hints and Tips:

- *If using the Rinex toggle switch to turn recording on/off, select MANUAL WITH TOGGLE.*
- *Only select a flow controller if the Saturn H system is physically connected to the controller with a serial cable.*

6) Touch the **SWITCH SETUP** button.

7) Set Master Switch to the method that will be used for turning treatment recording on/off (Touch if touching the screen or Toggle if using the Rinex toggle switch). See Section 6.6 for more information.



8) If the Saturn H system is connected to an external controller and section sensing is supported then set the Section Switches to External, if the intention is to touch the screen to turn the section recording on and off, then set the Section Switches to Touch.

9) Touch **EXIT SETUP**.

Hints and Tips:

- *If using AutoSPRAY the selection made in Switch Setup for Section Switches will be overridden by the AutoSPRAY selection when AutoSPRAY is set to ON.*

2.10 Connecting the GPS

While GuideTRAX V3 is starting, the attached GPS receiver may need some time before becoming fully operational. If the system is new it is most likely that the GPS has not been powered up since initial factory testing. Hence the GPS Status indicator may show a warning, or an alarm message while the GPS receiver gathers new information about the visible satellites.

While this process is occurring the GPS Status Indicator, located in the lower right hand corner of the main screen and illustrated in Figure 2-9 may show an alarm status (See Section 2.7 for more details). When the GPS Status Icon changes to the scrolling satellite, the receiver is ready for normal operation.

Figure 2-9: The GPS Status Indicator with Satellite Icon

2.11 Recording a Treatment

GuideTRAX V3 is designed to record information when the vehicle is operational, such as when a boom spray is actually spraying chemical or a spinner spreader is spreading fertiliser. This manual refers to this operation as a treatment, however it is sometimes also referred to as a coverage area in other publications.

In order to record when a treatment is being applied or when the vehicle is in transit it is necessary to switch between the recording and transiting mode.

The Saturn H system can be configured to start and stop recording via three different methods:

- **SCREEN** The screen can be used as the switch by touching either the bonnet on the Virtual Road Window or the Vehicle Icon on the Map Screen. Touching either of these points will then reverse the action.
- **TOGGLE** The RINEX Toggle switch is connected to the Saturn H interface controller and the switch can be turned ON or OFF. Additionally the RINEX Toggle can be wired to peripheral devices which supply a 12vDC switch when the treatment is ON (eg. a spray rate controller solenoid), see Section 6.6.1 for further details.
- **EXTERNAL** The Saturn H system is compatible with a number of peripheral controllers which communicate with the interface controller via a computer protocol. To confirm controller compatibility check Table 8-1 in Section 8.3.6.2.

To start and stop recording use the method that has been setup in section 2.9.7 Setting Up Master And Section Switches.

3

Vehicles & Booms

GuideTRAX V3 software incorporates advanced vehicle modelling software to ensure that the recorded treatment areas are truly correct. It is particularly relevant as further advances in GPS accuracy become available and automatic control of treatment application is adopted.

GuideTRAX V3 can accurately model a spray boom or any implement which is towed by a tractor. In order to perform these calculations it is imperative that the measurements of the vehicle and GPS antenna are accurately recorded.

GuideTRAX V3 is designed to allow numerous plant and equipment used on the farm to be entered into the database for selection of a rig that may be used for seeding, spraying or any operation where the guidance system is used.

Link: Each item of plant and equipment is a different link (a tractor, truck, tank and boom are all individual links).

Rig: Each rig is made up of one or more links selected from a list, up to a maximum of five. This concept is illustrated in Figure 3-1 which shows three links to assemble one rig.

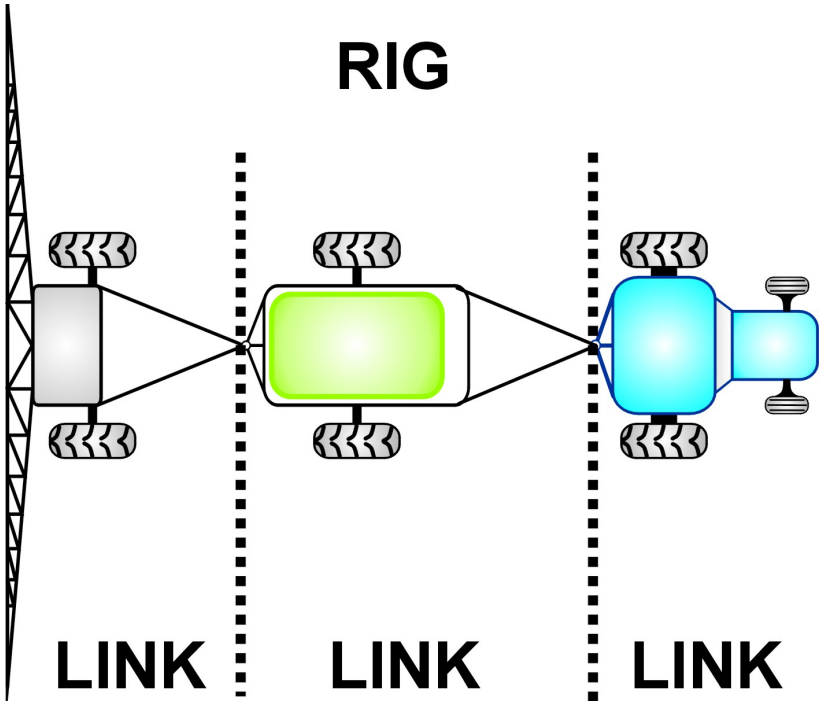


Figure 3-1: Rigs and Links

3.1 Configuring The Vehicle

Access: **SETUP** **VEHICLE SETUP** **LINK SETUP**

The first link that will be used in the assembly of a rig will be the vehicle. The vehicle may comprise several different types including, a conventional tractor, truck, articulated tractor, or a self propelled boom spray.

The different characteristics specific to individual vehicles including a tractor, articulated tractor and implement are described in the following sections.

3.1.1 Tractor

The term "vehicle" is used generally in this manual to describe the link at the front of a rig. The vehicle may be either a tractor, truck or any other vehicle which is used for towing other plant or for applying treatment. In GuideTRAX V3, the TRACTOR is defined as the vehicle which has the GPS receiver/antenna mounted on it.

The measurements for the vehicle are illustrated in Figure 3-2. The measurements from the GPS antenna to the centreline of the axles, vehicle, and the hitch point will need to be recorded and entered into GuideTRAX V3.

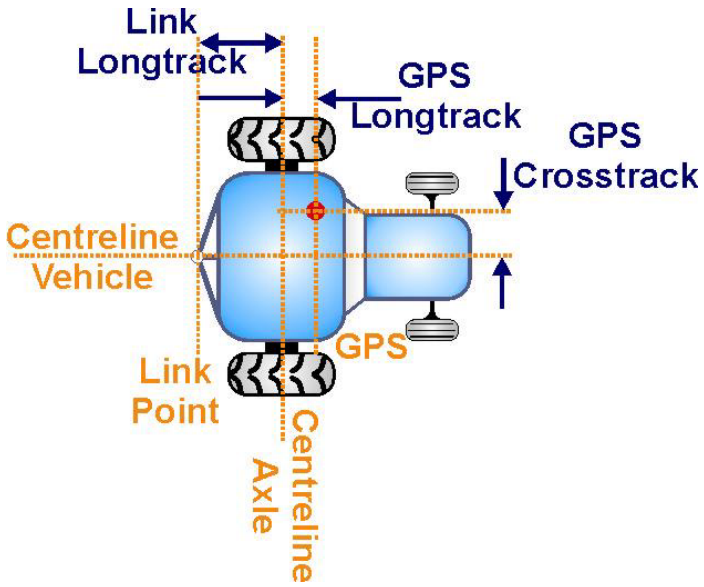


Figure 3-2: Tractor & Measurements

3.1.2 Articulated Tractor

The articulated tractor is a combination of two links. In order to enter the details of an articulated tractor it will be necessary to enter the measurements as indicated in Figure 3-3.

The GPS receiver/antenna must be mounted on the front half of the tractor and ARTICULATED selected as the Link Type in the Link Setup Wizard. The Wizard will created two links, with the first half as the first link in the rig, and the second half will be created as the second link in the rig.

Note that the GPS Longtrack measurement must be entered as a negative value if it is behind the front axle as shown in Figure 3-3

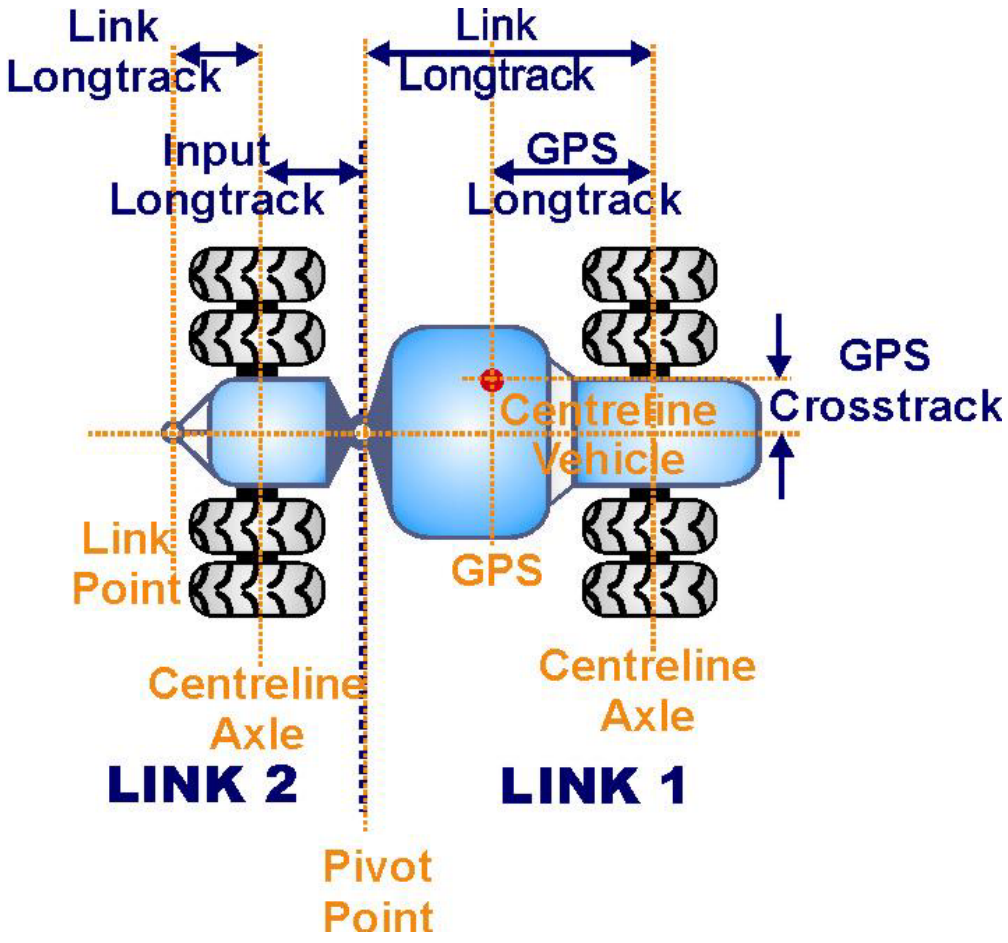


Figure 3-3: Articulated Tractor

3.1.3 Self Propelled Sprayer

The self propelled sprayer is treated as one link with the boom spray attached at the link point. In addition, self propelled sprayers may also have the boom attached to the front of the vehicle. In this situation the Link Longtrack measurement to the boom will be a negative value. These measurements are illustrated in Figure 3-4.

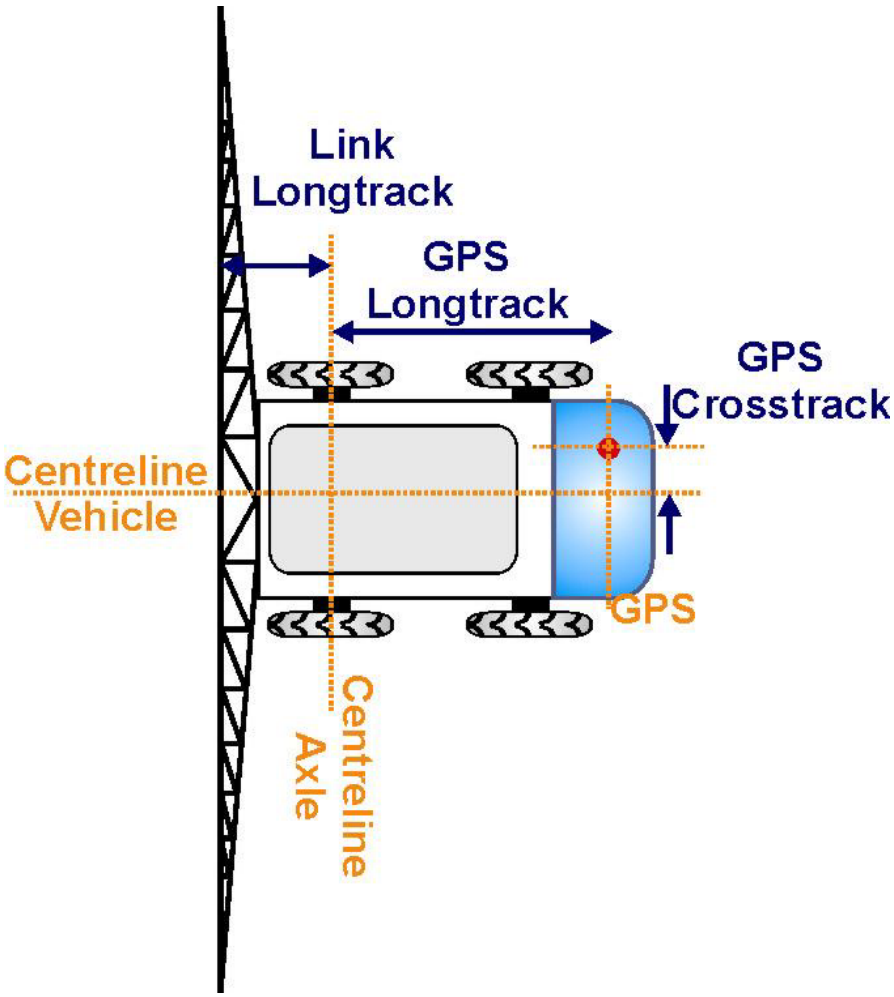


Figure 3-4 Self Propelled Sprayer

3.2 Configuring The Towed Implement

Access: **SETUP** **VEHICLE SETUP** **LINK SETUP**

The second or trailed link in a rig is typically of one or two varieties. Commonly referred to as a Pig or a Dog trailer, their characteristics and measurements are detailed below.

3.2.1 Pig Trailer

The Pig or the conventional trailer is very simple to model. The trailer may have one or more fixed axles which are all located at the rear of the trailer. This is illustrated in Figure 3-5.

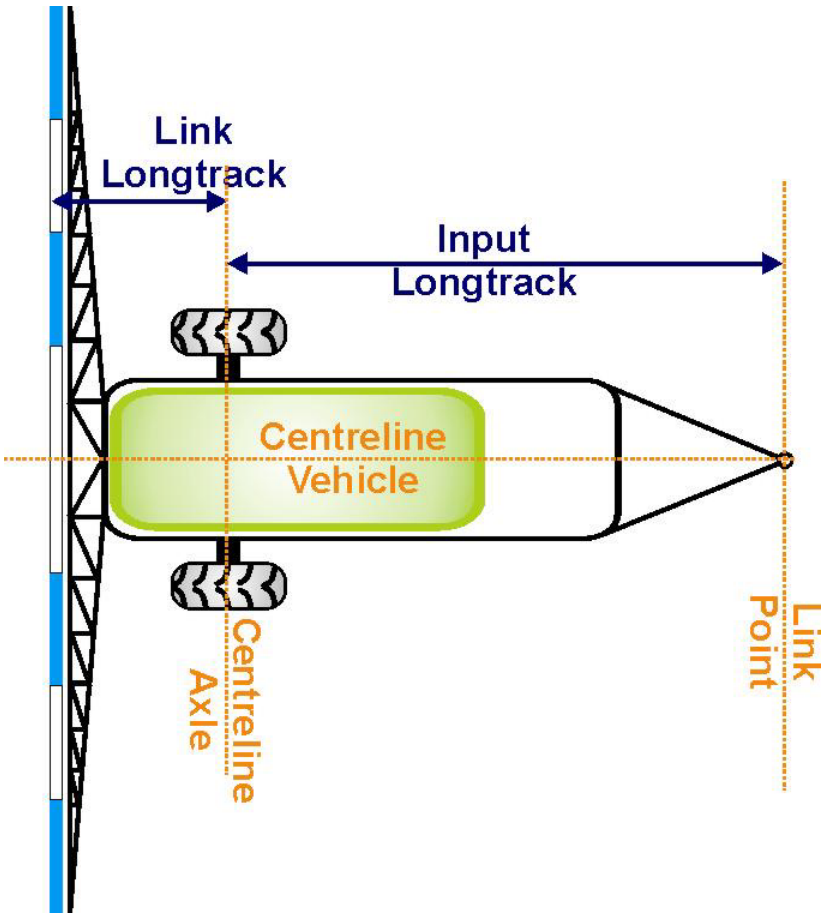


Figure 3-5 Conventional Trailer

If the trailer has a group of axles (e.g. two fixed axles at the back), then the Link Longtrack measurement must be measured from the centre of the group of axles to the rear flow point or hitch point.

3.2.2 Dog Trailer

The Dog trailer is similar in concept to the articulated tractor as it comprises two links. The trailer has at least two axles with the leading axle being mounted on a turntable as illustrated in Figure 3-6.

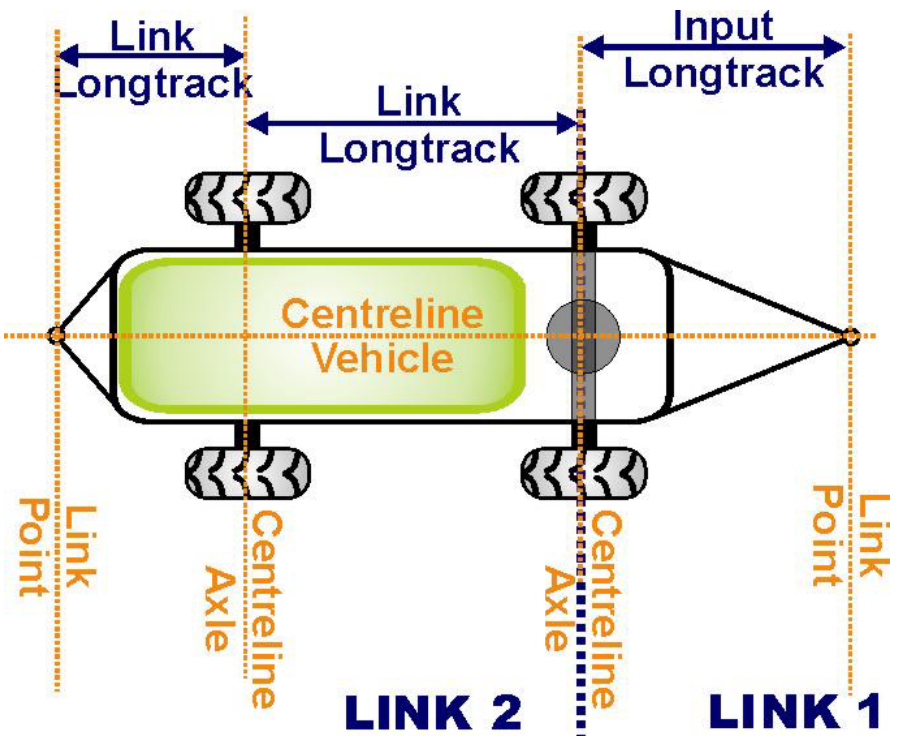


Figure 3-6 Dog Trailer Layout

When entering information for the two links the front section of the trailer must be entered as the first of the two links that make up the rig. The front section of the trailer will have a Link Longtrack measurement of 0.0 metres.

If the trailer has a group of axles (e.g. two fixed axles at the back), then the Link Longtrack measurement must be measured from the centre of the group of axles to the rear flow point or hitch point.

3.3 Configuring the Rig

Access: SETUP VEHICLE SETUP RIG SETUP

The Rig comprises one or more links. The Rig also defines the boom or swath width, the tank capacity, the flow controller and steering controller used in the makeup of the Rig.

3.3.1 Configuring the Boom Settings (Swath Width)

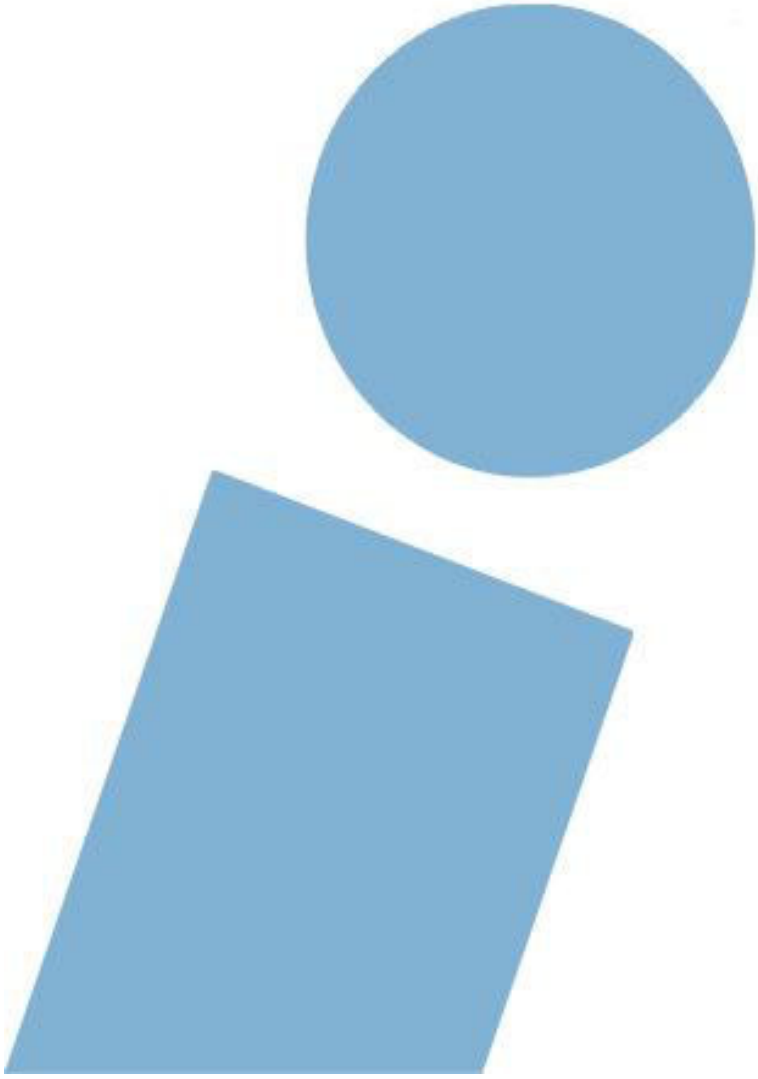
Access: SETUP VEHICLE SETUP RIG SETUP BOOM SETTINGS

The swath width of the rig represents the actual width of the treatment applied. Hence the swath width may represent the width as applied from a spreader, or may apply to the width of a spray boom.

When a spray boom is used the boom settings may be divided into sections to represent the actual boom spray. The boom settings, the number of sections and their respective widths may be configured in the Edit Rig Window.

4

Fields & Virtual Memory



4.1 Virtual Memory

GuideTRAX V3 automatically saves field information whilst the system is operational. This information is saved in the onboard Virtual Memory. The Virtual Memory will retain the information on the treatment area until such time that it is cleared from the Virtual Memory. Furthermore the information is retained regardless of whether the system has been shutdown or not. Accordingly a field can be left unfinished and completed at a later date by using the Virtual Memory.

Access: **FIELD** **MEMORY**

There are nine Virtual Memory slots in all models of GuideTRAX V3, as illustrated in Figure 4-1. As treatment is recorded, the information is saved in the selected Virtual Memory slot. It will stay in the selected slot until it is either saved by touching the **ARCHIVE** button, or the field is restarted.

Each of the nine Virtual Memory slots can be occupied by unfinished treatment data at any one time.

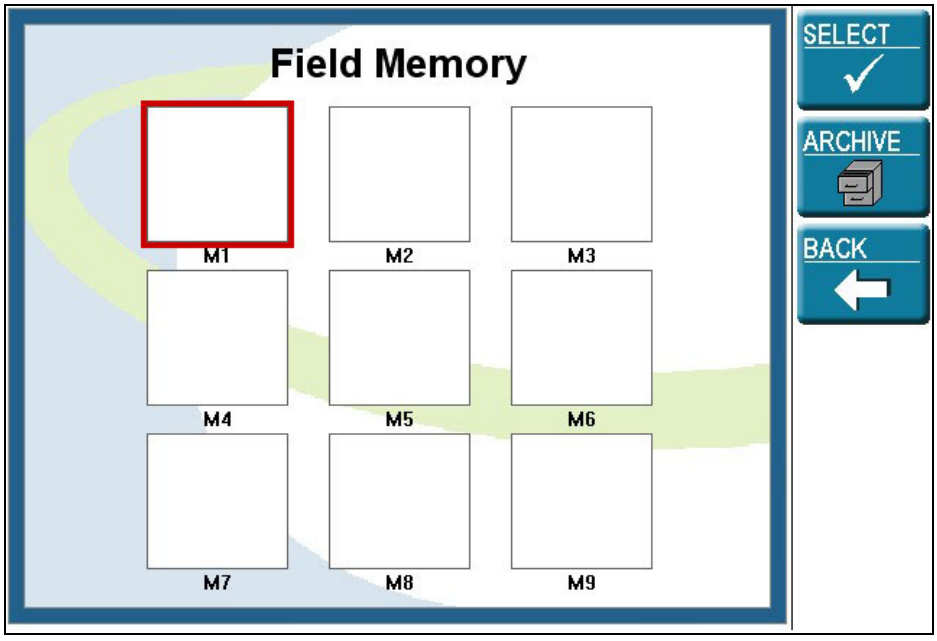


Figure 4-1: Field Memory Window

4.2 Setting Up the Season, Client, Farms and Fields

In order to record information so that it may be easily retrieved in the future it is necessary to have a logical database system. The HR model uses the Farm Field structure which is easily recognised by the relationship of one farm that may have many fields. Furthermore each Farm is defined in a Client and cropping season.

The HR model will allow a user to create one or more clients on the system and each client may have one or more farms. All information that is recorded may then be saved to a field as required.

Before using guidance it is necessary to set up where the information will be recorded, i.e. into a season and farm. Field names could also be set up at this time, but it is not necessary, as when a particular treatment for a field has been completed, the field name can be entered at that time – see Section 4.4. Also, field names may already have been set up in the office and imported into GuideTRAX V3 along with farm maps.

Each field will be saved in the current season and currently selected client and farm, so the current client and farm must be set up and selected before starting a treatment in a particular field.

See Section 2.9.1 for instructions on creating the season, client and farms and Section 2.9.3 for instructions on selecting the client and farm.

4.3 Starting a New Field

1) When a new treatment is being started in a field, a Virtual Memory slot must first be selected – touch **FIELD** **MEMORY**

2) Select any empty Virtual Memory slot, or, if none are empty, choose one which is no longer required.

3) If the Virtual Memory slot has a thick red line around it as shown around M2 in Figure 4-2, then it has been selected.

4) Touch **SELECT** **RESTART** **OK**. This will clear any previous treatment data from the selected Virtual Memory slot and set the boom width to the current vehicle.

5) Treatment can now be started.

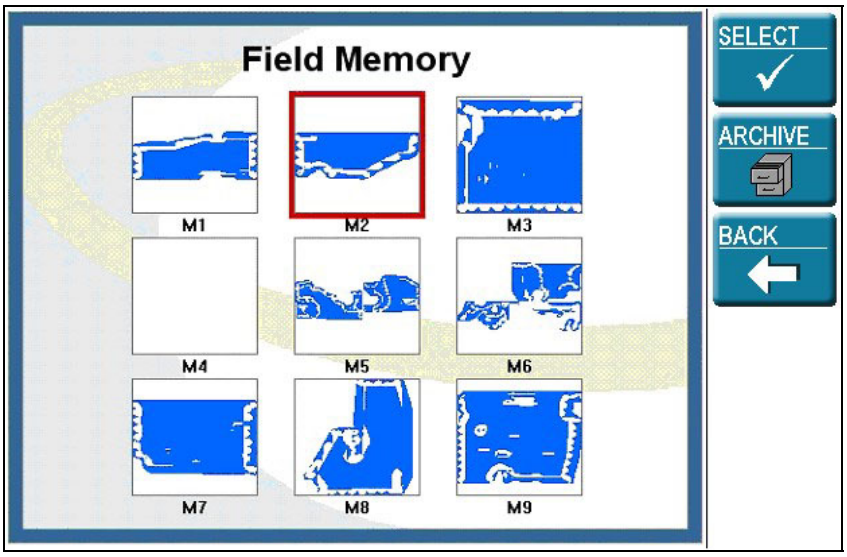


Figure 4-2: Field Memory Window

Hints and Tips:

- *AutoFIELD in Saturn HR will automatically select an empty memory slot if one is available, or AutoFIELD will automatically re-load the treatment if returning to complete a job. See Section 6.5 for more information.*

4.4 Saving a Field

Once a treatment has been completed in a field, the information can be saved to the history. The information is then available to be exported from GuideTRAX V3.

1) Turn treatment recording off.
2) Touch **FIELD** **MEMORY**
3) Select the virtual memory slot containing the finished treatment.
4) Touch the **ARCHIVE** button.
5) If the field has not been recognised by AutoFIELD a message will be displayed asking for a name to either be selected from a list or created. Touch **OK**.
   If the field has been recognised by AutoFIELD then the field will be stored under the recognised name, and jump directly to step 9.
6) The SELECT FIELD Window will then be displayed. Either select an existing field name from the list, or create a new field name by touching **NEW**.
7) If a new name is typed in, touch **OK**.
8) On the SELECT FIELD Window, touch **SELECT** once the correct field name has been selected. If the treatment is able to create a boundary then you will be asked if you wish to create a boundary. Touch **OK** if there was a complete first lap around the field which can be used as a boundary, otherwise touch **CANCEL** and the boundary can be manually created later.
9) A message stating "Treatment successfully archived" will be displayed. Touch **OK**
10) Touch **BACK** **BACK**

4.5 Viewing Field Information

Once the information has saved as described in Section 4.4, it can be viewed in History.

Access: **RECORDS** **HISTORY**

1) A list of all fields for the current client and farm will be displayed, as shown in Figure 4-3. If the field has been treated several times in the current season, it may appear in the list several times. The current client and farm are displayed at the bottom of the screen.

2) More details about treatment recorded in the field can be seen by first touching the line of field information to select it, then by touching **PROPERTIES**

3) Touch on each of the information tabs along the top of the Treatment Properties screen to see more information about the treatment applied to this field.

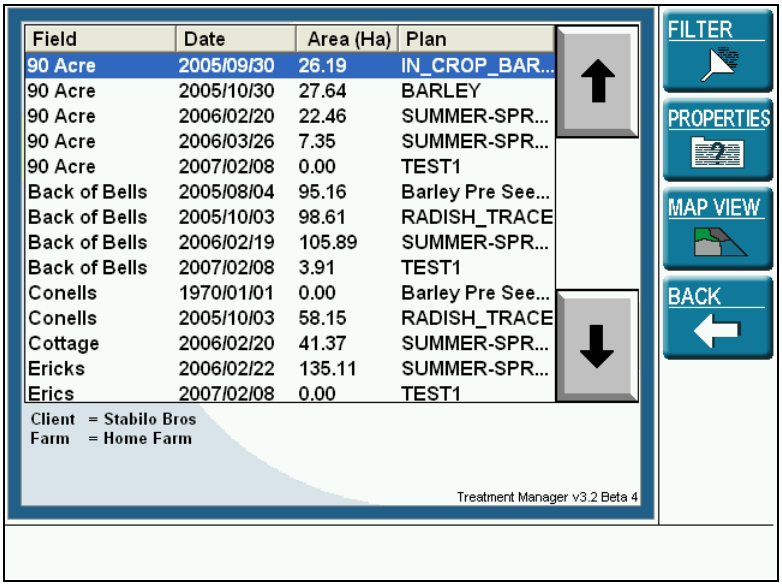


Figure 4-3: **Field History Window**

4.6 Unarchiving An Archived Field

When a field has been Archived it is removed from the virtual memory and no further treatment information can be added to it.

The field can be un-archived by touching **RECORDS** **HISTORY** **PROPERTIES** **EDIT** **UN-ARCHIVE FIELD** as shown in Figure 4-4. This will remove it from the History and return it to the virtual memory, where it will be displayed with the saved field name.

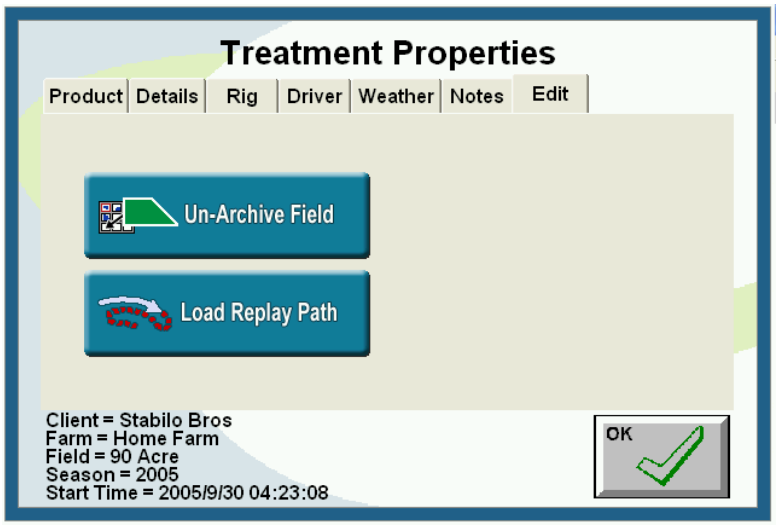


Figure 4-4: **Edit Treatment Properties Window**

Hints and Tips:

- *Next time it is archived, a field name will not be requested.*
- *If the un-archived field is restarted (by touching* **FIELD** **RESTART** **OK***) it will be permanently lost.*

4.7 Transferring and Backing Up Saved Fields

Fields which have been archived can be copied to a USB storage device:

1) Copy any information on the USB device which needs to be kept to a safe place, as any pre-existing information may be deleted when transferring field data from the Saturn H interface unit.

2) Insert the USB drive into the USB port on the Saturn H interface unit.

3) Touch **SETUP** **TRANSFER FILES** **EXPORT FILES**

4) A progress bar will be displayed while information is copied, then a message will appear: "Export Completed Successfully". Touch **OK**

5) Touch **BACK** **BACK**

5

Using Guidance

A major feature of GuideTRAX V3 is the ability to provide guidance to the vehicle operator so that treatment can be applied to a field as accurately as possible. In order to treat an entire field the operator will want to ensure that no areas are missed and minimise over lapping areas. Due to the never-ending shapes of fields a number of different spraying techniques have been developed.

These techniques, as shown in Figure 5-1 are summarised as follows.

- **Parallel lines** Perfectly straight lines that are parallel to each other.
- **Racetrack** Lines that are in an ever decreasing shape. The pattern is not necessarily a square or circle.
- **Contour lines** Lines that are parallel, however they are not straight. These lines are typically found around contour banks.

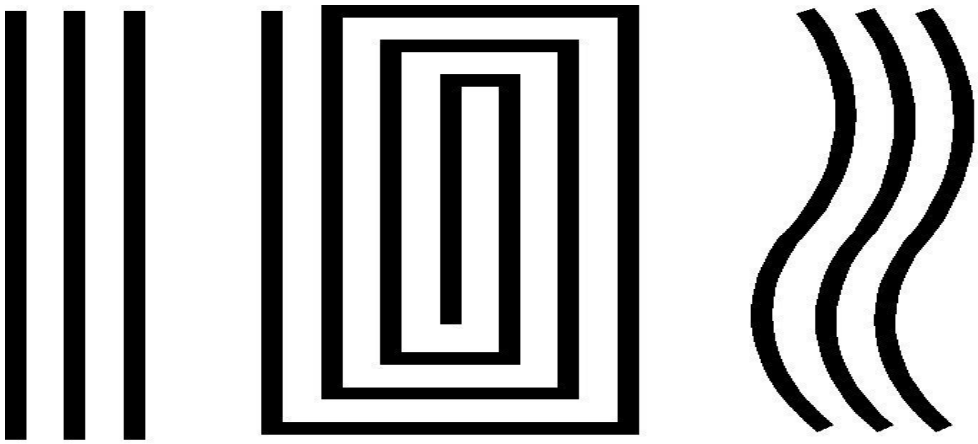


Figure 5-1: Typical patterns used in treating fields Parallel Lines, Racetrack and Contour lines.

It is not the intention of GuideTRAX V3 to decide which method is superior as each operator has their own preferences as to which method they use for a given field. More importantly, it should be noted that the operator could use any of these techniques, or a combination, for guidance in applying a treatment to a field.

5.1 Creating a Guideline

A basic principle of GPS guidance is to create a guideline for the system and operator to follow, the guideline maybe straight or curved depending upon user requirements. Once created the guideline is represented on the map screen as a red line.

In order to create a guideline there are two basic principles to consider. Firstly for straight parallel lines it is necessary to define two points and the guideline is created between these points as shown in Figure 5-2.

Figure 5-2: Guideline with Points A and B

Alternatively a guideline can be created to follow alongside an existing treated area which maybe curved or straight. The guideline is created one swath width away from the existing treatment. This is shown in Figure 5-3.

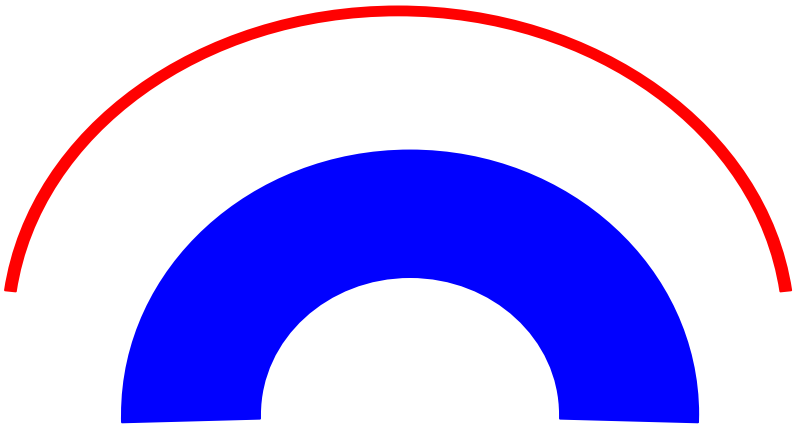


Figure 5-3: Guideline along Curved Treatment

5.1.1 Parallel Guidance

Treating a field using the parallel method is very simple. As previously described, the parallel method is for straight lines only and consequently the first task is to set out a straight line to work from. This is easily achieved by defining one point at one end of the field and one at the other end and connecting the two points with a line. This is termed either the base or key line. From this line, the next parallel guideline is calculated to be across one swath width minus any guide overlap distance entered, see Section 5.4.1. GuideTRAX V3 automatically calculates these parallel guidelines as the vehicle moves around the field. A typical parallel spray pattern is shown in Figure 5-4.

Figure 5-4: A typical spray pattern using parallel guidance. Points "A" and "B" define the base line for all other parallel lines.

The points "A" and "B" should be as far apart as practical to minimise errors in determining the base line. Ideally, the points should be located prior to commencing spraying so that the actual spray pattern along the base line is truly straight. Once the base line is defined, the operator simply needs to follow the indicators on the light bar, or virtual road to stay on-line.

As one swath line is finished and the vehicle turns back to start the next pass GuideTRAX V3 will automatically increment to the next parallel line. Swath lines can be sprayed in any order and GuideTRAX V3 will show the nearest parallel line to the vehicle. Swath lines will not be missed, as the treated area on the map screen will always show exactly which areas have been treated and the areas that haven't.

In order to use parallel line guidance, press the **POINT A** button on the Guide Menu. A dot will appear on the screen representing point A. The **POINT A** button will now turn into the **POINT B** button. Once pressed it will create the second dot on the screen.

The **POINT B** button will now revert back to the **POINT A** button.

Press the **PARALLEL** button to draw the projected parallel line and activate parallel guidance. The Parallel guidance can be deleted/deactivated on this line by touching the **GUIDE OFF** button or press **POINT A** to redefine a new line (The system will prompt whether to create a new point A or cancel).

Hints and Tips:

- *Pairs of AB guide points can be stored and reused in the future. Once a pair of AB guide points is set, you can use the* **SELECT AB** *button in the* **GUIDE** **MORE** *menu to view the current field with previously stored guide points. You can toggle through the points by pressing the* **Next AB** *button and observing their orientation as drawn on the field. Select the AB line by pressing* **ACCEPT**.

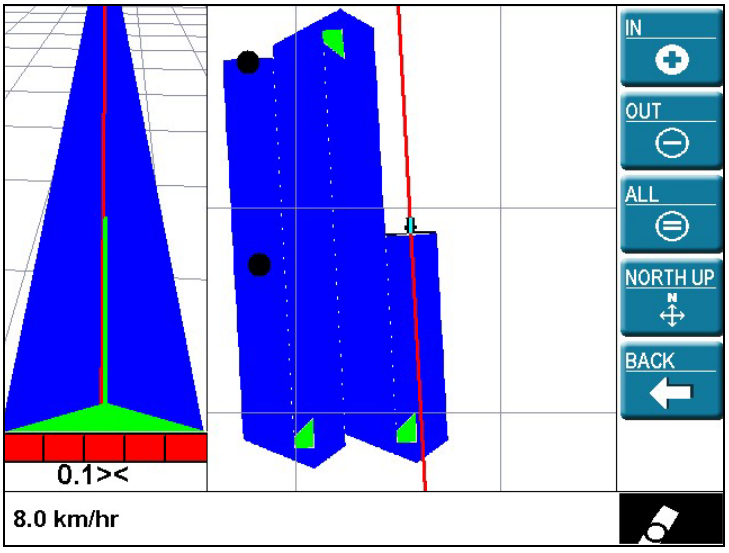


Figure 5-5: Parallel guidance

5.1.2 Racetrack (Lock) Guidance

The racetrack guidance method is called lock guidance because instead of using a pre-defined line, the system “locks” on to a previous swath when calculating the guideline for the next run.

This method of guidance is also very simple. The operator merely has to drive around the perimeter of the field as usual. Typically the outside perimeter would be governed by a fence line that dictates the shape of the field, this may be rectangular or some irregular shape. This is not important to GuideTRAX V3, as the next swath line will be adjacent to the last swath by the distance of one swath width minus any guide overlap distance, see Section 5.4.1. Once again, this is not important as GuideTRAX V3 automatically calculates this for the operator. A typical racetrack spray pattern is shown in Figure 5-6.

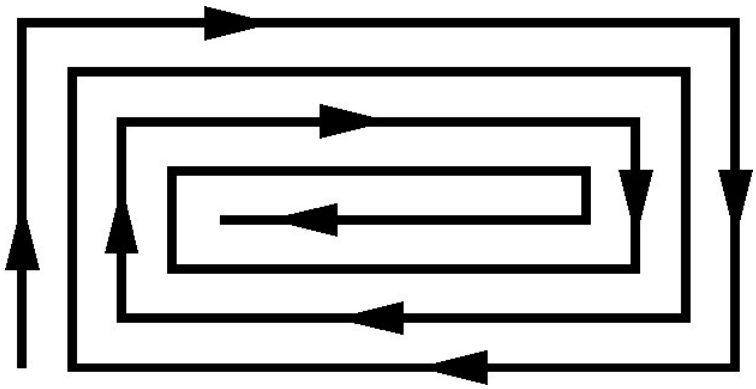


Figure 5-6: Typical Spray Pattern using Racetrack

Once the perimeter of the field is completed the vehicle moves towards the next swath line using the Map screen for guidance. When the vehicle comes alongside the previous treatment (perimeter lap) the operator touches the **LOCK** button in the Guide Menu and then follows the Virtual Road or arrows on the light bar to stay on-line. A guideline is displayed on the Map screen which indicates the line that needs to be followed. GuideTRAX V3 will continue to automatically update the guideline as the vehicle moves around the field.

The guideline will always be computed to be adjacent to the previous treatment. Hence, if the vehicle manoeuvres around a tree the subsequent guideline will also show a deviation. The operator can choose to ignore this guideline and simply steer straight through these areas. A typical racetrack screen is shown in Figure 5-7.

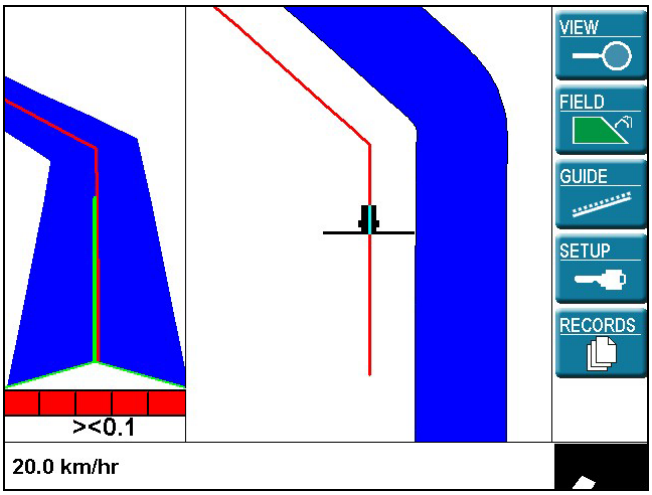


Figure 5-7: Typical guideline from racetrack guide lock

The guideline can be turned off at any time by touching the **GUIDE OFF** button.

5.1.3 Contour Lines Method

A contour line is a set of parallel lines that are not straight; however the adjacent lines are parallel to each other. The contour lines method is the same in operation as the racetrack method for spraying a field. The guidance **LOCK** button is used to lock on to an adjacent line, which is the contour line to be followed.

The operator merely has to drive the first contour line in a field as usual. Typically, this will be alongside a contour bank that dictates the pattern or shape of the contour line to be followed. Similar to before, GuideTRAX V3 computes the next guideline to be adjacent to the last swath by the distance of one swath width minus any guide overlap distance, see Section 5.4.1. Once again, this is not important as GuideTRAX V3 automatically calculates this for the operator. A typical contour spray pattern is shown in Figure 5-8.

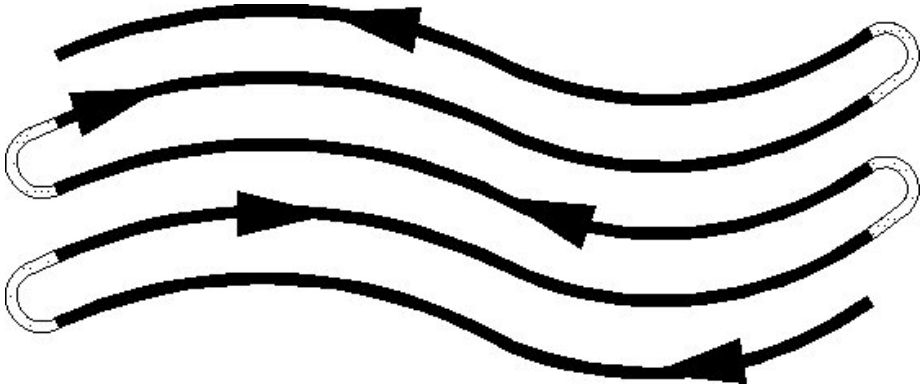


Figure 5-8: Typical Spray Pattern using Contour Lines

As the first contour swath line is completed, the vehicle turns around to commence the next swath line using the Map screen for guidance. Once the vehicle comes alongside the previous swath line (first contour line) the operator engages the guidance lock by pressing the **LOCK** button in the Guide Menu and then follows the indicators on the lightbar or virtual road to stay on-line. A guideline is displayed on the Map screen indicating the lock line that needs to be followed.

At the end of the contour line, guidance is switched off as the vehicle moves away from the treatment. Then as the vehicle is turned around to commence the next contour swath line the guidance lock will automatically be engaged. This pattern is repeated until the field treatment has been completed.

As with the racetrack guidance, the guideline will always be computed to be adjacent to the last swath line. As shown previously if the vehicle manoeuvres around a tree or some other feature the next guideline will show the same pattern.

Hints and Tips:

- *Turn guidance off before leaving the paddock to save erroneous guidance data being displayed.*

The guideline can be turned off at any time by touching the **GUIDE OFF** button.

5.2 Replay Guidance

GuideTRAX V3 allows the operator to recall the path driven at the time of a previous treatment application. The guidance system will then provide a guideline which follows this path. Treatments applied using parallel, racetrack and contour guidance can all be replayed. The previous treatment must first have been Archived to History - refer to Section 4.4 Saving a Field for details.

5.2.1 Loading a Treatment File To Be Replayed

1) From the Main Menu touch **RECORDS** **HISTORY**

2) Use the and buttons to select a treatment containing the required treatment path.

3) Touch **PROPERTIES**

4) Touch **EDIT** **LOAD REPLAY FILE**

5) A message will be displayed seeking confirmation to use this file for a new replay path. Touch **OK**

6) Another message stating that the selected treatment is now the current replay file will appear. Touch **OK**

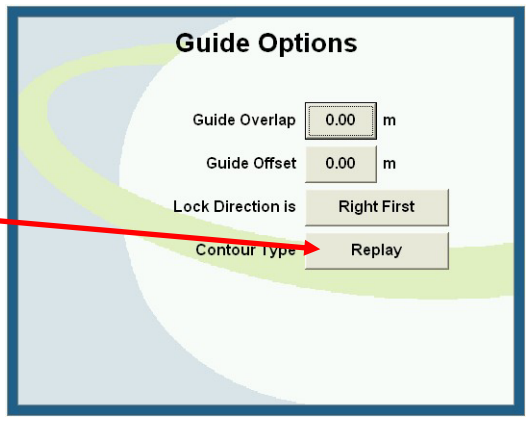
7) Touch **OK** **BACK** **BACK**

Hints and Tips:

- *For a RePLAY path to be available the field boundary must first be mapped and recognised by AutoFIELD.*
- *The system will remember the last RePLAY path for each field and will try to load this path if RePLAY guidance is used.*

5.2.2 Setting Up RePLAY Guidance

Once the replay file has been loaded, Guide Options must be setup for RePLAY.



1) Touch **SETUP** **MORE** **GUIDE OPTIONS**
2) Set Contour Type to Replay.
3) Touch **EXIT SETUP**
4) Drive to the point in the field where treatment is to be started.
5) Touch **GUIDE**
   The Guide Menu will be displayed with a **REPLAY** button where the **LOCK** button normally is.
6) Touch **REPLAY**
   The guideline from the replay file loaded in Section 5.2.1 will be displayed on the Virtual Road and Map Screen and the **REPLAY** button will also have changed to **GUIDE OFF**
7) Start treatment. The nearest guideline will be displayed as a thick red line, while others will be faint.

The guide line can be turned off at any time by touching the **GUIDE OFF** button.

Hints and Tips:

- *If frequently switching between Lock and RePLAY then use a Remote Button Box with a button assigned to Contour Guide Mode as a shortcut to switching contour modes.*

5.3 Guidance information

Guidance information is provided to the operator using the Map screen, the Virtual Road Window and optionally using the external light bar. Each device presents information to the operator that enables them to make decisions on which direction to travel.

The Map screen provides a bird's eye (Map) view of the treated area. The map view clearly shows where the vehicle is and the direction it is heading. It may be configured as the North Up display or the Heads Up display. Most operators prefer the Map Screen to be orientated in the Heads Up mode as the top of the screen represents the direction the vehicle is heading. Furthermore the treated swath shows which areas have been treated and the area yet to be treated.

The display can be split to show both the Map screen and the Virtual Road window. The Virtual Road displays an image directly forward of the vehicle, from a typical vehicle operator position, to show the guideline.

In addition to this directly below the Virtual Road Window is the lightbar which defines the offset to the guideline. The lightbar information is computed from the centreline of the vehicle to the guideline and the lightbar arrows may be configured for user preference. Each arrow can be configured to represent one centimetre or one metre. This same information will also be displayed on the external lightbar (optional item).

In summarising there is no right or wrong method to adopt, it is quite simply a user preference as to which information is used for guidance.

5.3.1 Virtual Road Information

The Virtual Road is very easy to follow as the information displayed is very intuitive. The Virtual Road can be likened to driving along a roadway, however rather than driving on one side of the road, the whole road is used and the white line painted down the centre represents the guideline.

When sitting in a vehicle and looking forward along the road it appears to become smaller as it approaches the horizon. Similarly the Virtual Road becomes smaller as it approaches the top of the screen. Deviations along the road are also easily interpreted as the Virtual Road has no obstructions to block the view along the roadway.

An important aspect to consider is the width of the roadway in the Virtual Road. This does not represent the actual swath width of the treated area, but rather a fat guideline. The actual guideline in the centre of the roadway is the true position where the vehicle should be driven.

The Virtual Road has a vehicle bonnet in the lower portion of the Window with an elongated line extending from the centre of the bonnet as shown in Figure 5-9. This represents the centreline of the vehicle projected forward along the Virtual Road. The tip of the triangular bonnet represents the centre of the vehicle.

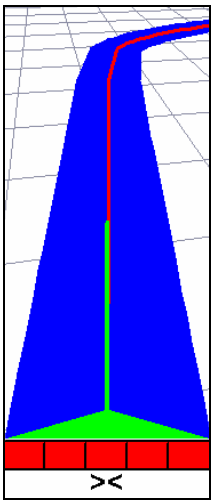


Figure 5-9: The Virtual Road

In essence the red guideline and the green centreline of the vehicle should coincide for perfect guidance.

The width and depth of the Virtual Road may be customised for individual user preferences if necessary, see Section 6.3.3 for further details.

5.3.2 Lightbar

The lightbar information is configured to display how far off-line the vehicle is from the guideline. The accuracy required for the lightbar information will be dependant upon two factors, firstly the input GPS information and secondly the required treatment.

The information that is displayed below the Virtual Road window may also be displayed on the optional external lightbar. The external lightbar provides the driver with guidance information from a physical device that

is mounted in the driver's line of vision. Offsets are easily seen, without having to look away from the driving task at hand.

The lightbar provides a left-right indicator showing which way the operator must steer to get on to the current guideline. The operator manoeuvres the vehicle to either the left or right as indicated by the lightbar until the vehicle is on-line. A typical light bar display is shown in Figure 5-10.

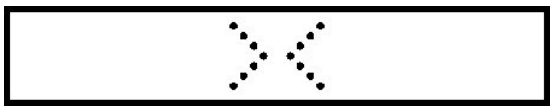


Figure 5-10: The lightbar display showing the vehicle is on-line

If the vehicle veers off-line, the lightbar will display arrows indicating the direction (left or right) needed to steer to the current guideline. The number of arrows shows how far off-track the vehicle is, determined by preset distances (See section 6.3.4 for details on how to define the lightbar offsets). If the vehicle travels further away than these distances, the display will show how many metres/feet the vehicle is away from the guideline.

Figure 5-11: The lightbar display showing the vehicle is between 2-3m to the left of the guideline. (Note: Distance depends on lightbar settings)

Figure 5-12: The lightbar display showing the vehicle is 5m off-line.

5.4 Guidelines and offsets

GuideTRAX V3 allows the user to adjust the position of the guideline to suit different requirements. Typically this will be either to suit the requirements of the accuracy of the GPS receiver and/or the ability of the operator to follow a guideline. Furthermore it may be to assist in adopting tramline farming where different width implements are used, and when an automated steering system (AutoSTEER) is used.

5.4.1 Guide Overlap

Prior to using GPS guidance most operators automatically applied a natural overlap to accommodate any inaccuracies whilst driving. This overlap may have varied according to prevailing circumstances such as whether foam markers were visible or not.

GPS guidance however does not have a natural overlap from the operator's mind but rather a mathematical offset that is either applied or not.

The Guide Overlap is simply the amount of overlap that is applied to ensure that no area is missed when applying a treatment if the vehicle is driven wide of the guideline.

This is shown in Figure 5-13.

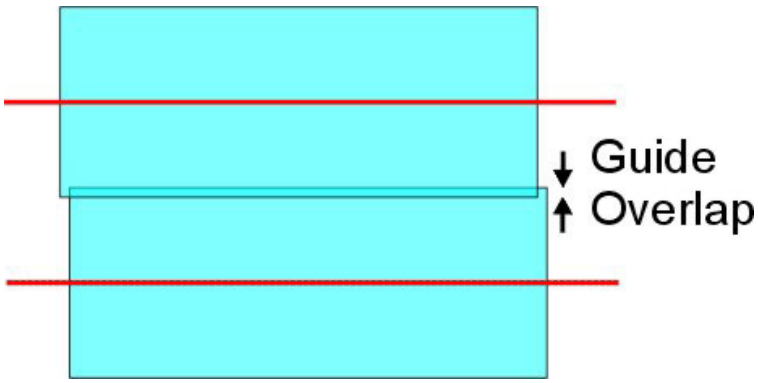


Figure 5-13 Guidance Overlap

The Guide Overlap setting can be changed in the Guide Options window from the **SETUP** **MORE** menu.

5.4.2 Guide Offset

When using tramlines in controlled traffic farming practices it will be desirable to use the same guidelines for all farming activities. However the implements will be of different widths and consequently it will be necessary to use an offset.

The Guide Options window, as shown in Figure 5-14 allows for a Guide Offset to be entered. The Guide Options window can be accessed from **SETUP** **MORE** **GUIDE OPTIONS**

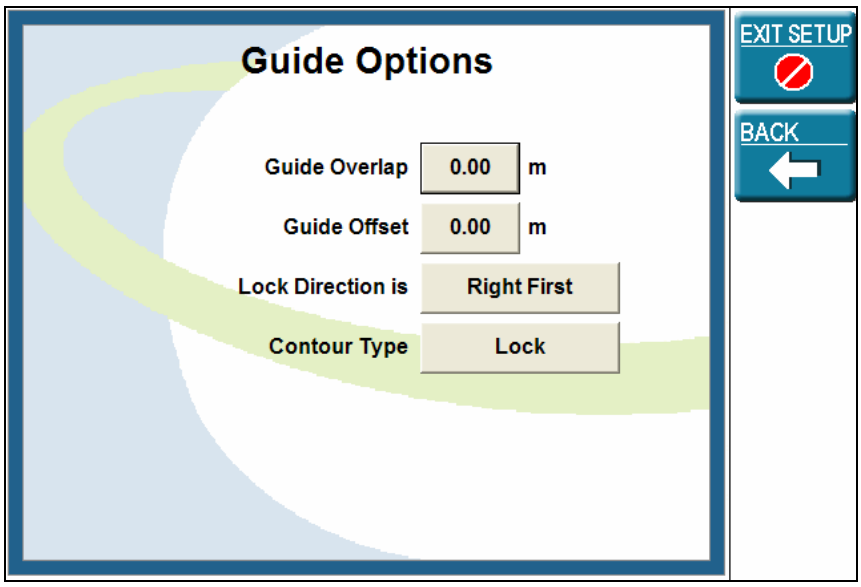


Figure 5-14 Guide Options Window

Hints and Tips:

- *This feature is only available when using parallel guidance.*

6

Customising the System

6.1 Enabling Options By Password

AutoSPRAY, AutoSTEER and FieldNET are optional extras which may be purchased from RINEX.

These options must be enabled in GuideTRAX V3 by password which must be requested from RINEX Technology.

Access: **SETUP** **ABOUT GUIDETRAX** **REGISTER**

Figure 6-1: Register GuideTRAX Window

1) The CFID number displayed on the screen, as shown in Figure 6-1 will need to be quoted when requesting the password from RINEX.

2) Touch the **PASSWORD** button to enter the password, and then touch **OK**

3) Touch **BACK** **BACK** to return to the Setup menu.

After an option has been enabled by password, further setup procedures may be required for that option to function correctly. See Section 6.2.3 for e-Dif, Section 9 for AutoSPRAY, Section 10 for AutoSTEER and Section 11 for FieldNET.

6.2 GPS Configurations

6.2.1 Defaults

The default settings are:

Required GPS Level:	DIFF
Connection Type:	Serial
GPS Baud:	19200

6.2.2 Changing the GPS Settings

Access: **SETUP** **MORE** **GPS SETUP**

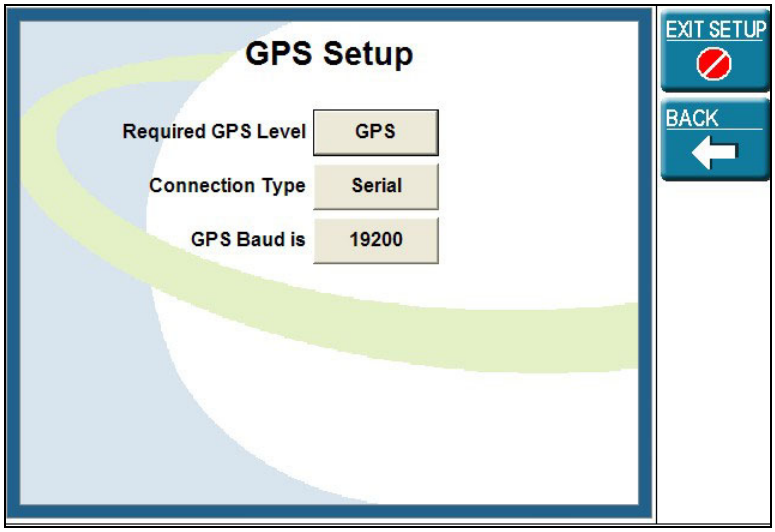


Figure 6-2: GPS Setup Window

Required GPS Level

By default, the system is configured to run on Differential GPS (DIFF). It is recommended that DIFF be used as a minimum.

A lower GPS accuracy can be selected by touching the Required GPS Level button in the GPS Setup Window as shown in Figure 6-2 above.

Select GPS if a higher accuracy signal cannot be acquired. Note that this setting is not recommended as it is not as accurate as higher accuracy signals and therefore significant errors can be introduced into the system when calculating guidance.

When GPS is selected, the scrolling GPS Status Indicator in the bottom right corner of the screen will display the No Differential signal symbol: if no DIFF signal is being received.

Connection Type

By default Connection Type is set to Serial. Most GPS receivers use a serial interface connection. CANbus is an optional extra that must be purchased. If the connected GPS receiver has a CANbus interface, the Connection Type must be set to CANbus by touching the Connection Type button in the GPS Setup Window as shown in Figure 6-2.

GPS Baud Rate

The GPS Baud button sets the serial communication speed which is only applicable when the Connection Type is set to Serial. The GPS Baud rate is set to 19200 by default, but can be changed if required to a lower baud rate by repeatedly touching the GPS Baud button in the GPS Setup Window until it displays the correct speed, as shown in Figure 6-2: GPS Setup Window.

If the vehicle has a Beeline steer controller and AutoSTEER is set to ON, GPS Baud will be set automatically.

Touch the **EXIT SETUP** button to return to the **Main** menu or **BACK** to return to the **Setup** menu.

6.2.3 Using e-Dif (Optional Extra)

Access: **(GPS Status Icon)**

Once e-Dif has been registered by password (see Section 6.1), the e-Dif button will be displayed on the GPS Status screen as shown in Figure 6-3.

Pressing the e-Dif button turns differential mode off and swaps the MiniMAX receiver from marine beacon to e-Dif mode and calibrates it. It can take several seconds before e-Dif takes effect.

The MiniMAX will return to marine beacon mode when it is powered off/on.

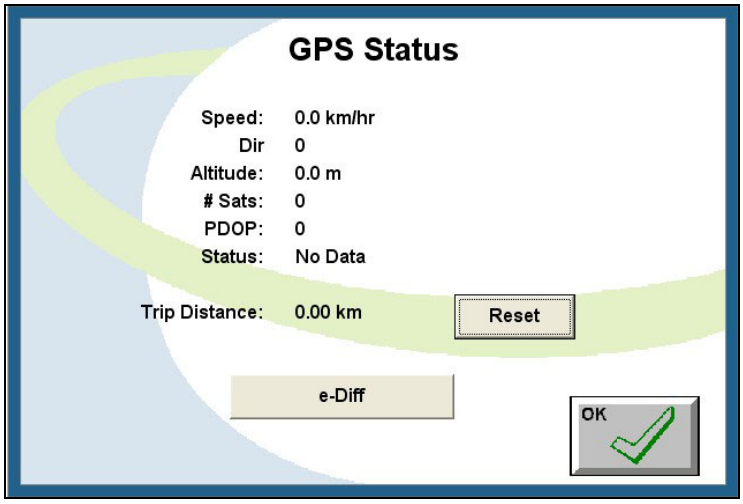


Figure 6-3: GPS Status Window With e-Dif Enabled.

6.3 Guidance Information

6.3.1 Heads Up/North Up

There are two modes of displaying information while it is being recorded (while driving). Choosing one or the other of these two views can affect the guideline being drawn on the screen.

Touch **VIEW** to select Heads Up or North Up mode.

Touch the **HEADS UP / NORTH UP** button to change to either Heads Up or North Up mode.

Heads Up – as the vehicle moves along the ground, the information on the screen is drawn so that the vehicle is always pointing towards the top of the screen, with the ground moving around the vehicle. The Heads Up button

is displayed.

North Up – as the vehicle moves along the ground, it also moves around the screen but the ground is shown as staying stationery. The North Up

button is displayed.

Hints and Tips:

- *If the Map screen is zoomed too far in or out, it may be difficult to see areas which have already been treated. Touch* **VIEW ALL** *to see the treated area, then* **IN** *to see the vehicle and* **OUT** *to see the vehicle position in relation to the treated area.*
- *If the vehicle is a long way from the treated areas in the currently selected field, either the vehicle or the treated areas may not be visible on the screen.*
- *If the treated area is visible but not the vehicle, zoom* **IN** *to see the vehicle.*
- *If the vehicle is visible on the screen but not the treated area, touch* **VIEW ALL** *to see the whole treated area, then zoom* **IN** *to see more detail of the area around the vehicle.*
- *If zoomed too far out, the vehicle will appear as a large dot on the screen. As you zoom in, the vehicle will increase in size on the screen until it resembles the selected rig.*

6.3.2 Zooming In and Out While Driving

While the vehicle is moving, GuideTRAX V3 will not allow the system to zoom too far out or View All in Heads Up view, but will allow the system to zoom In as close as possible.

In North Up view, it is possible to View All and Zoom In or Out as far as required while driving.

6.3.3 Virtual Road

Access: **SETUP** **MORE** **VIRTUAL ROAD SETUP**

The Virtual Road can be turned on and off and customised for width and depth of view, however, the default values, as shown in Figure 6-4 are the recommended values.

Making the Virtual Road too short (depth) can result in corners coming up too quickly to be able to turn in time. Making the Back Width too narrow can create a distorted appearance which is difficult to drive to. Making the Road Width too narrow can also make it difficult to drive to.

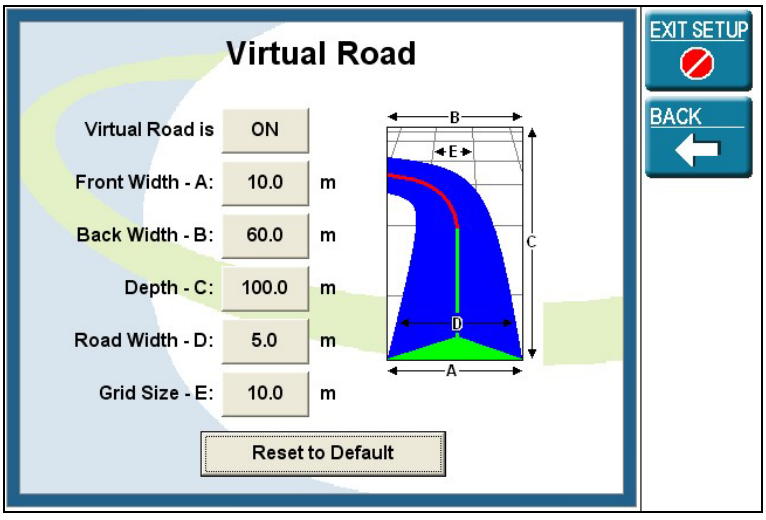


Figure 6-4: The Virtual Road Setup Window

Touching the **RESET TO DEFAULT** button will change all settings in the Virtual Road Window back to those shown in Figure 6-4 above.

Touch **EXIT SETUP** to return to the Main menu, or **BACK** to return to the Setup menu.

6.3.4 Lightbar

Access: SETUP MORE LIGHTBAR SETUP

Lightbar Baud

Each lightbar communicates at a speed of either 19200 baud or 9600 baud. The default setting as shown in the Lightbar Setup Window in Figure 6-5 is 19200 baud. This setting can be changed to 9600 baud for older lightbars.

Hints and Tips:

- *If the lightbar displays only "Ver 1.2x" then it is likely that this setting needs to be changed.*

6.3.4.1 Lightbar Distance Settings

The lightbar distance settings can be customised for higher or lower accuracy depending on the accuracy of the GPS receiver.

Each of the distance settings represents how far away (in metres) the vehicle is from the guideline. In the default settings shown in the Lightbar Setup Window in Figure 6-5, the **><** symbol set to 0.20m means that the lightbar will display **><** to indicate that the guideline is being followed to an accuracy of up to 0.20m.

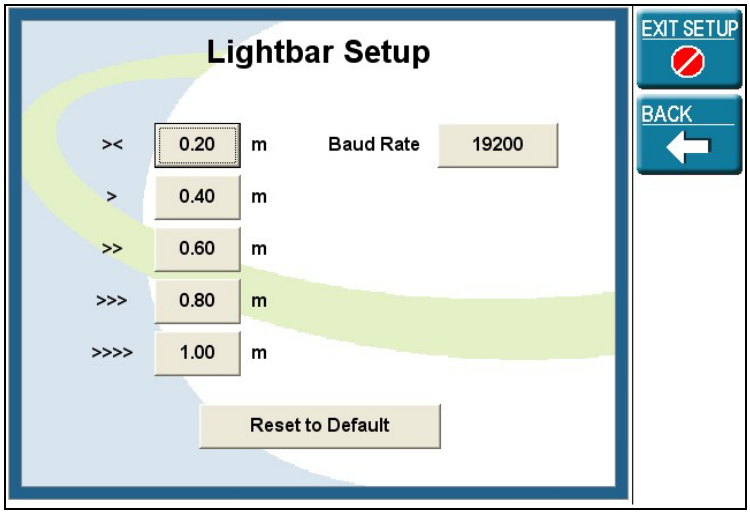


Figure 6-5: Lightbar Setup Window

It is recommended that the lightbar limits are set in relation to GPS accuracy. The default lightbar settings shown in Figure 6-5 are set for the default GPS type of DGPS (Differentially corrected GPS).

For a higher accuracy GPS receiver, it may be more appropriate to set the single arrow **>** to 0.10m, with other settings set similarly.

For e-Dif, less accuracy may be more appropriate and for GPS only (i.e. without differential correction), settings should be set to even lower accuracy.

Pressing the **RESET TO DEFAULT** button will change all settings back to those shown in Figure 6-5.

Touch **EXIT SETUP** to return to the Main menu, or **BACK** to return to the Setup menu.

6.4 The Screen

Access: **SETUP** **DISPLAY SETUP**

6.4.1 Night Mode

Night Mode was designed to assist night time driving.

When turned ON, Night Mode turns the background from white to black. Text which was black is then displayed white, and Guide Points (A & B) are displayed grey.

Night Mode can be turned ON or OFF at any time.

6.4.2 Grid

By default the grid is OFF and the Grid Spacing is set to 100 metres. The grid is a light-grey pattern on the background of the Map Screen. When turned ON, it enables the driver to quickly assess a distance or area in a particular place on the screen. For example, the area encompassed by a grid square measuring 100m x 100m = 1 Ha.

Touch the **GRID SIZE** button to change the Grid spacing figure.

6.4.3 Measurement Units

The units which are displayed on the screen throughout GuideTRAX V3 can be set to either Metric or Imperial, and can be changed from one to the other and back again at any time.

By default, the Measure Units are set to Metric.

6.4.4 Position Units

The vehicle position can be displayed in the Status Bar in either Cartesian coordinates (E/N - Easting & Northing) or geographical (Latitude & Longitude). By default the position units are set to E/N.

6.4.5 Field Colour

On the farm map fields are shown in a defined colour. The default is Pale Green when the system is first setup. If a farm map has been imported then the colour used will be the colour which has been defined in the farm map. The colour can be overridden by changing the Field Colour in Display Setup. To return the field colour to the colour defined by the map select the 'D' colour square in the top left of the colour pallet.

6.4.6 Status Bar

The Status Bar is the left half of the area at the bottom of the Main screen. Repeatedly touching this area will cycle through each of the status messages selected in the Status Bar Setup window. By default all Status Bar information is turned OFF.

Text shown in light grey in the Status Bar Setup Window indicates that those status messages are not available as the functions they report are optional extras which have not been purchased.

To turn a status message on so that it will appear in the Status Bar, touch the button next to the required message in the Status Bar Setup window.

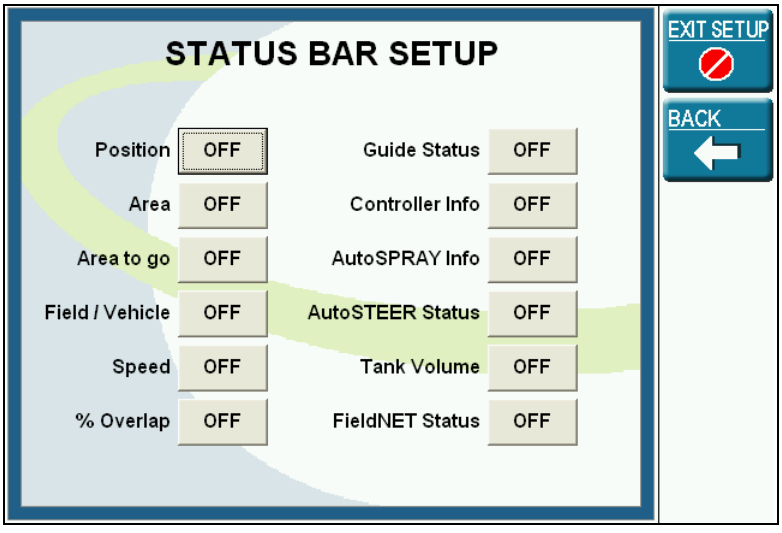


Figure 6-6: Status Bar Setup Window

For more information about the information provided in each message, see Section 2.6.

6.5 AutoFIELD

AutoFIELD uses farm map information to ensure treatments are always recorded under the correct field name. When archiving a completed treatment, AutoFIELD ensures the treatment is automatically saved under the correct name, without the need to select a field name or type the name in.

In the vehicle the driver can see from a list or a map the fields which are to be treated for the plan. When using plans the driver will be warned if he/she tries to treat the wrong field or treat the field with the wrong rate or product.

Unless a map of the farm has already been created and imported into the system, no background map will exist.

A background map of the farm can be created by using treatment data recorded by GuideTRAX V3 to generate field boundaries, or by using the PlanIT software on your office computer.

Access: **SETUP** **AutoFIELD**

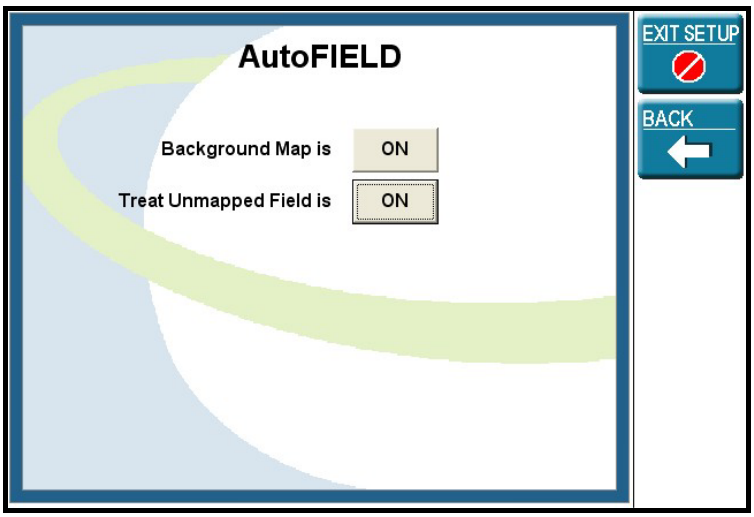


Figure 6-7: The AutoFIELD Window

6.5.1 The Background Map

In order to be able to see the background map when using GuideTRAX V3, you need to ensure the Background Map button is ON.

6.5.2 Treat Unmapped Field

If no background map already exists, or a field has not previously been mapped or treated using GuideTRAX V3 then the system will not recognise it. In order to treat a field which has not been mapped or included in the farm map, you will need to ensure that the Treat Unmapped Field button is ON.
For good record keeping it is recommended that Treat Unmapped Field is turned off after all fields on the farm have been mapped. This will ensure that AutoFIELD will warn the operator if treating the incorrect field.

6.6 Turning Treatment Recording ON and OFF

6.6.1 The RINEX Toggle Switch

The RINEX Toggle Switch is supplied with every new system. It can be used to start and stop treatment recording – either on its own or by being connected to a controller (in which case the controller's master switch starts and stops treatment recording).

6.6.1.1 Using the RINEX Toggle Switch Alone

When used without being connected to a third party controller, the RINEX Toggle Switch is plugged into the Controller port on the front of the Saturn H interface unit. Switching the RINEX Toggle Switch on or off will turn treatment recording ON or OFF.

6.6.1.2 Connecting the RINEX Toggle Switch to a Third Party Controller

When connected to a third party controller, the RINEX Toggle Switch must be permanently left in the OFF position (if the RINEX Toggle Switch is left on, then treatment recording can't be turned off) and the third party controller's master switch must be used to turn both treatment and recording on and off together.

1) Follow the instructions in the Saturn H Guidance System Installation Manual for installation of the RINEX Toggle Switch, connecting it to the Controller port on the Saturn H interface unit.

2) Touch **SETUP** **VEHICLE SETUP** **RIG SETUP**

3) Select the Rig and touch **EDIT**

4) In the Edit Rig window, touch **FLOW CONTROL**

5) Touch the **FLOW CONTROLLER** button as shown in Figure 6-8.

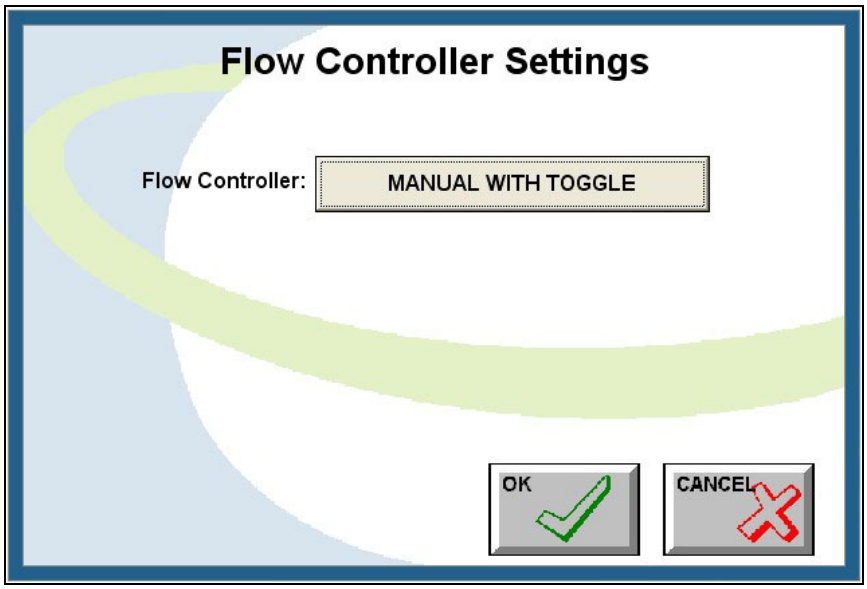


Figure 6-8: Flow Controller Settings Window

6) Select Manual With Toggle from the Flow Controller list.

7) Touch **ACCEPT** **OK** **OK** **BACK**

8) Touch **SWITCH SETUP**

9) Set Master Switch to **TOGGLE** as shown in Figure 6-9.

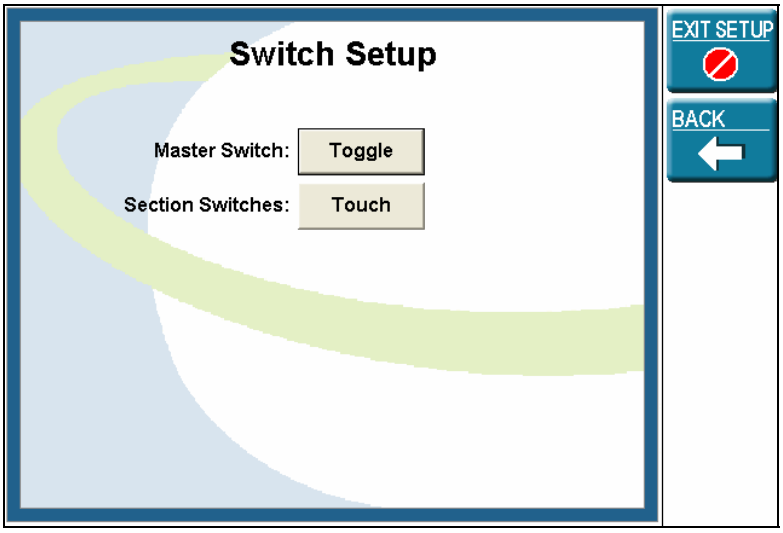


Figure 6-9: Switch Setup Window

10) Touch **EXIT SETUP** to return to the Main menu.

6.6.2 Using Touch Instead Of a Switch

Treatment recording can also be started and stopped by touching the Vehicle Position Marker on the Map screen or by touching the green bonnet triangle in the Virtual Road window.

In this case, the Master Switch will need to be set to **TOUCH**

6.6.3 Connecting Directly to a Third Party Controller

Treatment recording can also be started and stopped with compatible controllers that connect directly to the Saturn H system. It will be necessary to ensure that the correct data interface cable is used.

1) Follow the instructions in the Saturn H Guidance System Installation Manual for connecting to a Third party controller to the Controller port on the Saturn H interface unit.
2) Touch **SETUP** **VEHICLE SETUP** **RIG SETUP**
3) Select the Rig and touch **EDIT**
4) In the Edit Rig window, touch **FLOW CONTROL**
5) Touch the **FLOW CONTROLLER** button.
6) Select the desired Third Party Controller from the Flow Controller list.
7) Touch **ACCEPT** **OK** **OK** **BACK**
8) Touch **SWITCH SETUP**
9) Set Master Switch to **EXTERNAL** and Section Switches to **EXTERNAL**
10) Touch **EXIT SETUP** to return to the Main menu.

6.7 The RINEX Button Box (Optional Extra)

The RINEX Button Box connects to one of the two USB ports on the Saturn H interface unit and has four buttons which can each be set to perform various GuideTRAX V3 functions.

Access: **SETUP MORE REMOTE BUTTONS**

The default settings for each button are shown in Figure 6-10.

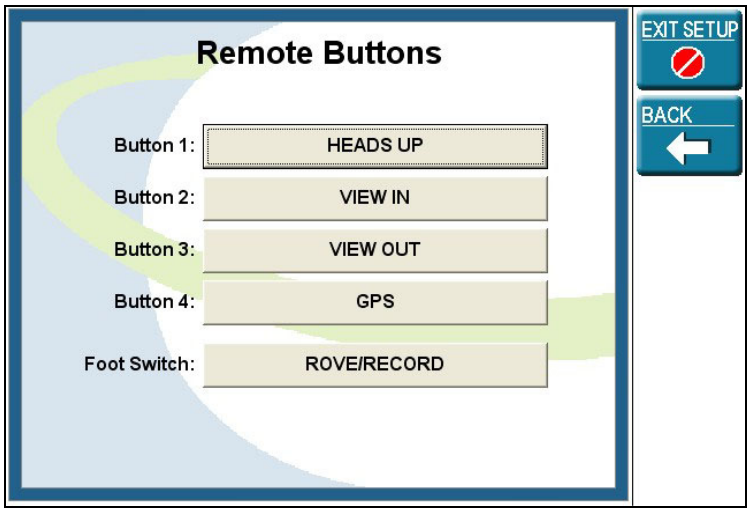


Figure 6-10 Buttons Setup Window

These settings can be changed for each button by touching on the value assigned to that button. All of the options listed in Table 6-1 are available to all buttons, and using each option has the same effect as going through the menus to select the function or turn the setting ON or OFF.

The RINEX Button Box and the RINEX Footswitch can both be connected at the same time, so that five buttons are then available.

6.8 The RINEX Foot Switch (Optional Extra)

The RINEX Foot Switch is designed to be operated by foot and is connected to one of the USB ports on the Saturn H interface unit.

By default, the Foot Switch is set to Rove/Record, but can be changed to perform any of the functions listed in Table 6-1.

The RINEX Button Box and the RINEX Footswitch can both be connected at the same time, so that five buttons are then available.

Table 6-1: Button Box And Foot Switch Settings

Function	Function Location	Action Performed By Button
AUTO-SPRAY OVERRIDE LEFT	**AUTOSPRAY STATUS** **OVERRIDE LEFT**	Put the sections into Override state from right to left.
AUTO-SPRAY OVERRIDE ON/OFF	**AUTOSPRAY STATUS** **OVERRIDE TO ON** or **OVERRIDE TO OFF**	Swaps between Override to Off and Override to On.
AUTO-SPRAY OVERRIDE RESET	**AUTOSPRAY STATUS** **OVERRIDE RESET**	Returns control of all boom sections to AutoSPRAY
AUTO-SPRAY OVERRIDE RIGHT	**AUTOSPRAY STATUS** **OVERRIDE RIGHT**	Put the sections into Override state from left to right.
AUTO-SPRAY ON/OFF	**SETUP** **AUTOSPRAY** **ON** or **OFF**	Turns AutoSPRAY ON or OFF.
AUTO-STEER ENGAGE	AutoSTEER Status button bottom right of screen (if AutoSTEER enabled and ON)	Engages / Disengages AutoSTEER.

Function	Function Location	Action Performed By Button
CONTOUR GUIDE MODE (LOCK/ REPLAY)	**SETUP** **MORE** **GUIDE OPTIONS** **CONTOUR TYPE**	Toggles the Contour Type setting in Setup > More > Guide Options between Lock and RePLAY.
CONTOUR GUIDE ON/OFF	**GUIDE** **LOCK** or **GUIDE** **REPLAY**	Switches Lock or RePLAY Guidance on or off depending on which Contour Type Mode (see above) is active.
DAY/NIGHT	**SETUP** **DISPLAY** **NIGHTMODE**	Toggles between black (Night) or white (Day) background.
GPS	GPS Status icon bottom right corner of screen	Brings up the GPS Status window.
HEADS UP	**VIEW** **HEADS UP**	Toggles the view between Heads Up and North Up.
LIGHTBAR INTENSITY	**GUIDE** **MORE** **LIGHTBAR**	Brings up the Lightbar (optional) Intensity window.
PARALLEL GUIDE ON/OFF	**GUIDE** **PARALLEL**	Switches Parallel guidance on or off (after AB points have been set).
POINT AB	**GUIDE** **POINT A** or **POINT B**	Sets Point A, or if Point A has already been set, sets Point B.
ROVE/ RECORD	Vehicle Icon on Map Screen OR Green bonnet in Virtual Road Window.	If Touch has been selected in Setup > Vehicle Setup > Switch Setup, then pressing a button which has been set to Rove/Record is the same as touching the screen to turn treatment recording on and off.

Function	Function Location	Action Performed By Button
VIEW ALL	**VIEW** **VIEW ALL**	Zooms display to show all of the recorded treatment data in the current field.
VIEW IN	**VIEW** **VIEW IN**	Zooms display in.
VIEW OUT	**VIEW** **VIEW OUT**	Zooms display out.
VIRTUAL ROAD	**SETUP** **MORE** **VIRTUAL ROAD SETUP**	Turns the Virtual Road window on or off.

6.9 The Multi Section Boom Interface
(Optional Extra)

An optional feature of GuideTRAX V3 is the ability to display all active boom sections on the screen using the Multi Section Boom Interface (MSBI) as the individual sections are switched ON and OFF. This enables optimal coverage of a field, minimising the overlap.

The MSBI is connected between the controller port on the Saturn H interface unit and the spray controller. It detects the status of each boom section (ON or OFF) and passes this information to GuideTRAX V3 where it is recorded and mapped on the screen.

The red section indicators under the Virtual Road window reflect the information about each boom section (ON or OFF) as it is received from the MSBI.

6.9.1 Installation

Follow the instructions supplied with the Multi Section Boom Interface, and connect the interface cable between the MSBI and the controller port on the Saturn H interface unit.

6.9.2 Enabling the MSBI

1) Touch **SETUP** **VEHICLE SETUP** **RIG SETUP**
2) Select the Rig and touch **EDIT**
3) Touch **FLOW CONTROL**
4) In the Flow Controller Settings window, touch the **FLOW CONTROLLER** button.

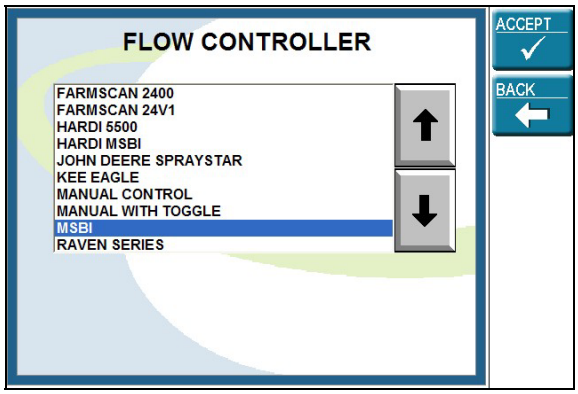


Figure 6-11 Flow Controller List Window

5) Select MSBI from the Flow Controller list as shown in Figure 6-11

   If the MSBI is connected to bidirectional valves (e.g. Hardi Valves), then select Hardi MSBI.

6) Touch **ACCEPT** **OK**

7) Touch **BOOM SETTINGS**

8) Check that the boom settings are correct and make any required changes.

9) Touch **OK** **OK** **BACK** **SWITCH SETUP**

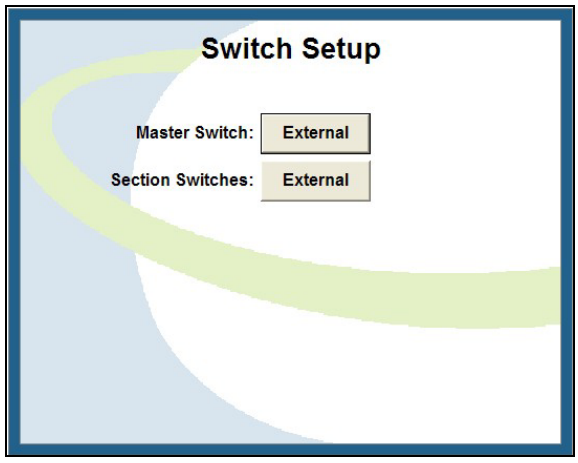


Figure 6-12 Switch Setup Window

10) Select External for both Master Switch and Section Switches.

11) Touch **EXIT SETUP** to return to the Main menu.

The current field must be restarted before the new settings will take effect.

7

Using Record Keeping Functions

7.1 Common Record Keeping Tasks

This section presents a step by step approach to performing the most common record keeping tasks – some of these tasks are performed in the Setup Menu, whilst most are performed in the Records Menu. If you require more information, please refer to Section 8 "The Menu System" of this manual for detailed explanations of all windows, buttons and their functionality.

7.1.1 Creating and Loading a Treatment Plan

GuideTRAX V3 software is built around the concept of Plans. A plan in GuideTRAX V3 refers to a treatment plan of one or more fields for a common purpose. For example, if ten fields are to be treated with urea (even at different rates), then this may make up one plan called PRE SEED UREA.

A plan called something like WHEAT KNOCKDOWN may have multiple chemicals with different rates for each field. Plans are represented as a grid of fields (each row) versus products (each Column) where the rate for the particular product and field is shown at the intersection of the appropriate row and column. (See Figure 7-2 on next page)

Having formal plans allows information to be prepared by a farm manager and passed to a driver for implementation. Plans also make it easier to record and keep track of the large number of treatment applications that take place in a typical farming season. Having plans allows the system to perform basic checks that the driver is in the correct field and that the current tank mix for the field is appropriate.

While the nature of farming requires that many decisions are made on the day, by having a starting plan, changes can be made and recorded in a more controlled and organized manner. In this way planning provides a key framework to bringing control and quality practices into farming.

Follow the procedure below when you want to create and load a plan:

(See Section 8.4.1.1 for more detail)

1) Touch **RECORDS** **TANK** **FILL**. The. Select Fill Details Window as shown in Figure 7-1 will be displayed.

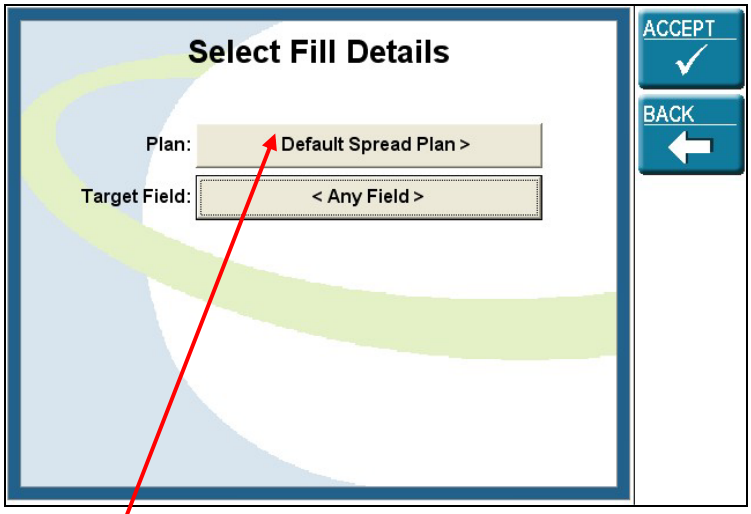


Figure 7-1: The Select Fill Details Window

2) Touch the Plan button. The Select Plan window is then displayed.

3) Touch **NEW**. A blank plan is displayed with a default name and rate of 100 L/Ha. See Figure 7-2 below. Note that at any time, you can either touch the screen directly to edit a cell, or you can use the **PRODUCT** **FIELD** and **DETAILS** buttons to change plan information.

4) To add products to the plan, touch **PRODUCT** and select from the list of available products. Touch **SELECT** to add the product to the plan. See Figure 7-2 below.

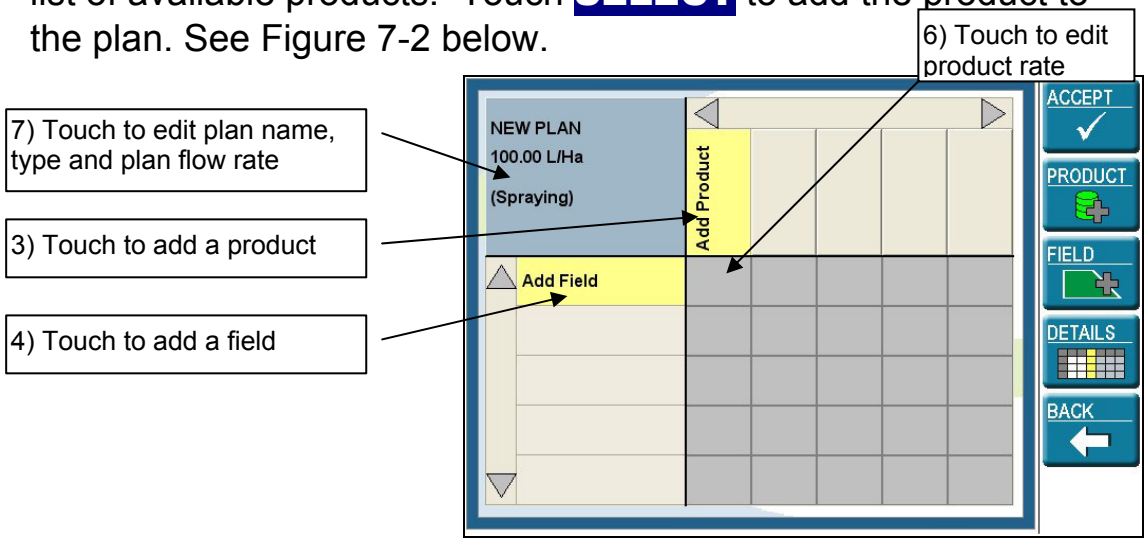


Figure 7-2: Creating a New Plan

5) Add fields by touching the **FIELD** button and select from the list of available fields. More than one field can be added at a time by touching each required field. Touch **SELECT** to add the field to the plan. See Figure 7-2 above.

6) You can also add a group of fields to the plan by touching **MAP VIEW**, then touching the desired fields directly on the farm map. Selected fields will change from grey to blue and can now be added to the plan by pressing **SELECT**. Once added the fields will be highlighted in the plan with a different colour (blue). (See **Figure 7-3**)

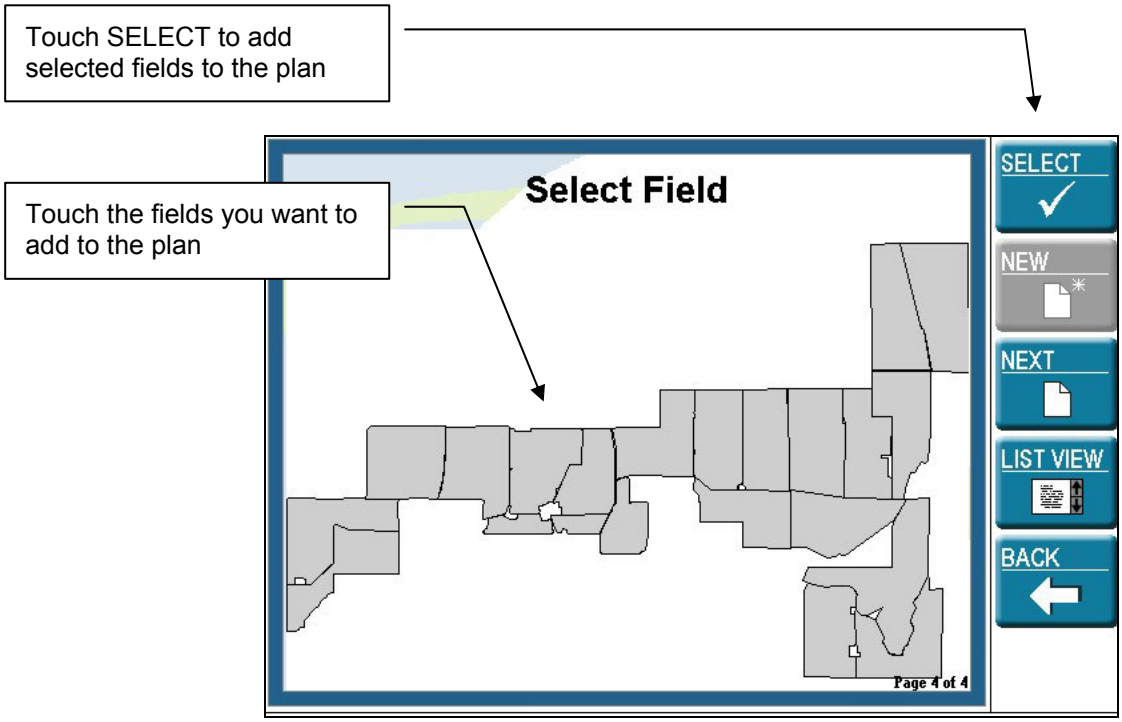


Figure 7-3: Adding a group of fields to a plan

7) Set product rates by touching the corresponding rate cell for a field/product in the plan table. See Figure 7-2 above.

8) Change the plan name by touching **DETAILS**. Touch the Plan Name button to edit the plan name. Touch the Plan Type button to change the type of plan. Touch the Plan Rate button to change the plan's total application rate. See Figure 7-2.

9) Touch **ACCEPT** to save the new plan (or changes) and **OK** to confirm saving the plan.

10) Now the new plan is displayed in the list of available plans. Select the plan you want to load by touching the name to highlight the plan then touch **SELECT**.

11) Touch the Target Field button to select the field to be treated.

12) Touch **ACCEPT** – the plan is now loaded as the current plan.

7.1.2 Using Default Plans

If a formal plan has not been created, a default plan can be loaded which allows products to be added to the tank without having to select a field before treatment commences. When the field is archived following completion of the job, the field name can either be selected from a list or a new field name created.

1) Touch **RECORDS** **TANK** **FILL**. The Select Fill Details Window as shown in Figure 7-1 will be displayed.

2) Touch the Plan button. The Select Plan window is then displayed.

3) Use the ↑ and ↓ buttons to select the appropriate default plan from the list then touch **SELECT** **ACCEPT**

4) Touch **PRODUCT** to add products to the tank. The Add Product window will be displayed – see Figure 7-4.

Figure 7-4: Add Product Window

5) Touch the Product button and select required product. If the required product is not listed, new products can be added by touching **NEW**

6) Touch **SELECT** to select the product.

7) Touch the Batch button to select or add a batch for the selected product then touch **SELECT** to select the batch.

8) Touch the Rate and Amount buttons to change these quantities.

9) Touch **ACCEPT** when all details are correct for this product.

10) When all required products have been added to the tank, touch **ACCEPT**. The tank contents indicator at the bottom of the window will then show that the tank is full, as shown in Figure 7-5.

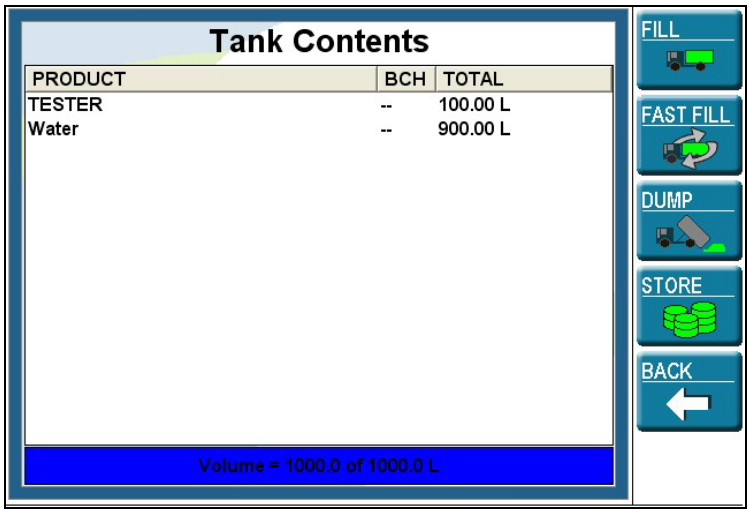


Figure 7-5: Tank Contents Window

7.1.3 Editing a Plan

(See section 8.4.1.1 for more detail)

To edit a plan you simply perform the same steps as you would when creating a new plan. See section 7.1.1 for details. Accordingly, follow the procedure below when you want to edit a plan:

1) Touch **RECORDS** **TANK** **FILL** **PLAN**

2) Select the plan you want to edit from the list by touching the name to highlight the plan. Now touch the **EDIT** button.

3) Edit the plan by adding products and fields as necessary. Adjust product rates and change the plan name or flow rate if required.

4) Touch **ACCEPT** to save the plan.

7.1.4 Filling The Tank

(See section 8.4.1.1 for more detail)

Before a field can be sprayed, the tank must be filled for a particular plan and appropriate target field. Follow the procedure below when you want to fill the tank:

1) Touch **RECORDS** **TANK** **FILL**. The Select Fill Details window is displayed.

2) Select the Plan and Target Field to be treated.

3) Touch **ACCEPT**. The Add To Tank window is displayed as shown in **Figure 7-6**.

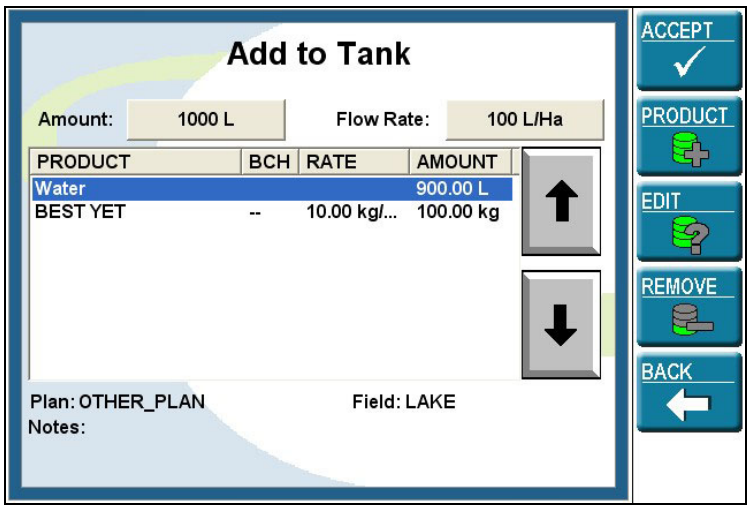


Figure 7-6: The Add To Tank Window

4) Select the amount you want to add to the tank. The default amount is the amount required to completely fill the tank. Touch the Amount value button to open the Part Fill window shown in Figure 7-7.

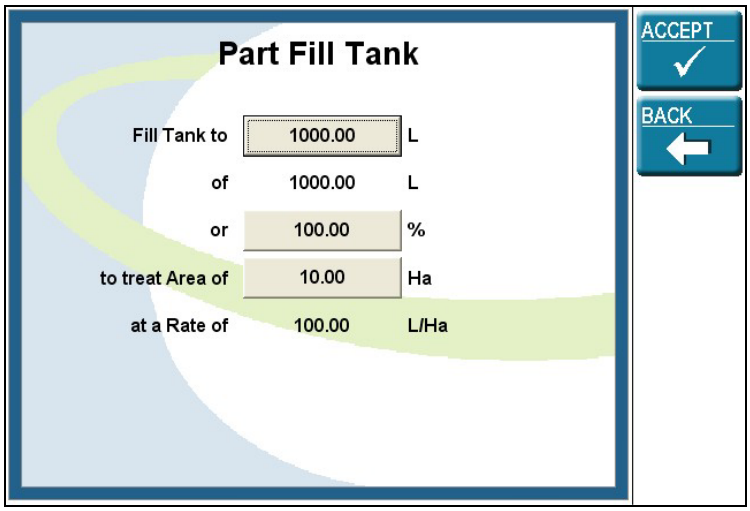


Figure 7-7: The Part Fill Tank Window

5) Now you can:

   - Touch the Fill Tank To button to set the level you want to fill the tank to
   - Touch the Percentage button to determine the required amount based on the percentage of tank capacity
   - Touch the Area button to determine the required amount based on the area value
   - Touch **ACCEPT** to save the changes and return to the Fill Tank window.

6) Touch the Flow Rate button to change the total flow rate, then touch **OK**. Note that the Flow Rate button does not appear when Spread or Seed plan types are selected.

7) Select a product to edit details of the rates or amounts of the current mix if necessary. Use the ↑ and ↓ buttons to highlight the required product then touch **EDIT** to open the Edit Product window as shown in Figure 7-8.

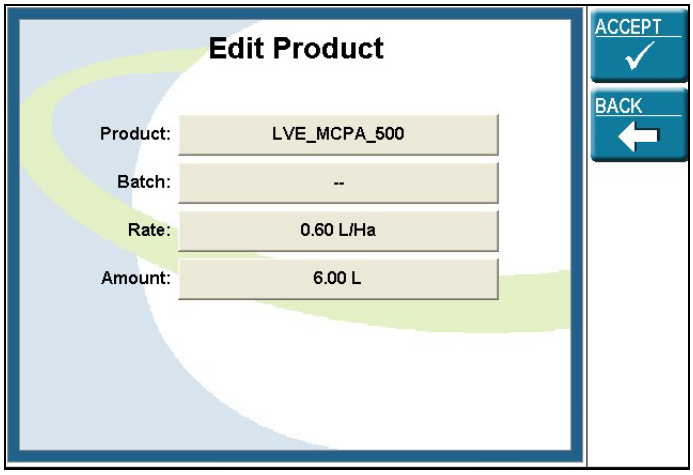


Figure 7-8 : The Edit Product Window

8) Now you can:

   - Touch **BATCH** to edit product batch details.
   - Touch **RATE** to change the rate the product is to be applied at.
   - Touch **AMOUNT** to change the amount of product to be used.
   - Touch **ACCEPT** to save changes and return to the Add To Tank window

9) Touch **ACCEPT** to fill the tank. The tank is now full with the desired product mix.

7.1.4.1 Fast Fill

Fast Fill uses the product details of the last fill for the current plan and field. It allows you to change which products and product details are to be added to the tank.

1) Touch **RECORDS** **TANK** **FAST FILL**.

2) Follow Steps 4 to 9 in Section 7.1.4 "Filling The Tank" above.

7.1.5 Dumping The Tank

(See Section 8.4.1.3)

Follow the procedure below when you want to dump the contents of the tank:

1) Touch **RECORDS** **TANK** **DUMP**

2) The Dump Tank window will be displayed.
   Adjust the remaining volume if required. The default value is 0.0L (to empty the entire tank).

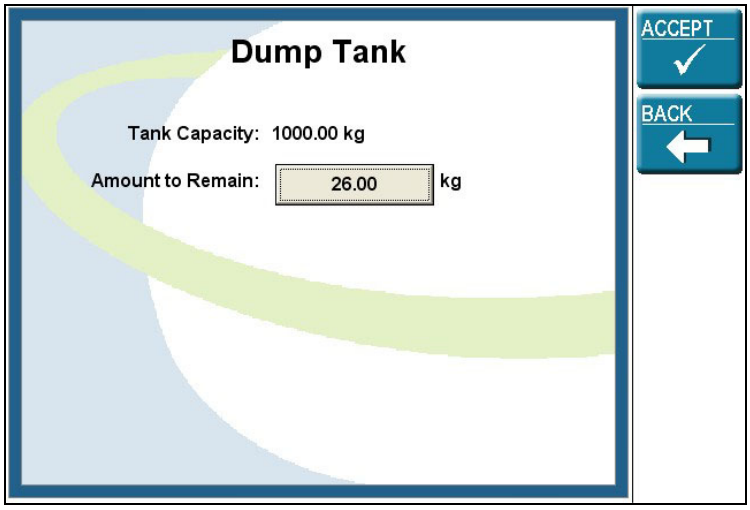


Figure 7-9: The Dump Tank Window

3) Touch **ACCEPT** **OK** to confirm dumping the current tank mix. The tank will now be empty.

7.1.6 Creating a Product Batch

An important part of record keeping involves tracking the various amounts of chemicals, fertilisers and seed used during farming applications. The product store helps by keeping track of the amounts of products purchased and used by maintaining an inventory of the products currently available for application. When the tank is filled, the operator selects from the list of available products.

Tracking products as they are purchased allows optional entry of product batch numbers. Product batches can be created, edited and deleted as required. When filling a tank with a mix of products, you can assign batches and the system will automatically keep track of used and remaining amounts in the Store.

When products are selected to fill the tank, the driver can select the correct batch number from a list rather than having to enter the typically large batch numbers. This makes the accurate recording of batch numbers much simpler.

Follow the procedure below when you want to create a product batch in the store: (See Sections 8.3.15.3 and 8.4.1.4 for more detail).

1) Touch **RECORDS** **TANK** **STORE**
2) Touch **ADD** to open the New Batch window. See Figure 7-10.
3) Touch the Product (Select Product) button to select from the list of available products.
4) Touch **SELECT**. Now edit the other properties of the batch as required.

Figure 7-10: The New Batch Window

5) Press **ACCEPT** to save the batch and return to the Store window. The batch is now displayed in the list of products in the Store.

6) Use the **EDIT** button to edit a batch and its properties and the **DELETE** button to delete a batch.

7) Touch **BACK** to exit the Store and return to the main Tank Contents window.

7.1.7 Importing Plans Created In The Office

(See Section 8.3.8 for more detail)

Follow the procedure below when you want to import plans from an external USB storage device (e.g. USB drive or compact flash card + compact flash card reader):

1) Ensure that you have exported plans onto a USB storage key from your office PC using RINEX PlanIT office management software.
2) Take the USB key to the vehicle equipped with the GuideTRAX V3 system.
3) Start up the system if it is not already running and insert the USB key into an available USB port.
4) From the main GuideTRAX V3 menu, touch **SETUP** **TRANSFER FILES** **IMPORT FILES**
5) Touch **OK** when the warning message appears stating that files were imported successfully.
6) Touch **RECORDS** **TANK FILL PLAN**. The imported plans should now be visible in the list and ready for selection.

7.1.8 Exporting Data To The Office

(See Section 8.3.8 for more detail)

1) Insert the USB key into an available port.
2) Touch **SETUP** **TRANSFER FILES** **EXPORT FILES**
3) Touch **EXPORT** and **OK** to confirm data export operation. Observe that 'Data transferred successfully' message is displayed.

The USB key may now be used to perform an import to the office computer using the RINEX PlanIT Office Management software.

7.1.9 Creating a Weather Record

A weather record allows you to attach useful weather information to treatments for future reference.

Follow the procedure below when you want to create a weather record:

(See 8.4.2 for more detail).

1) Touch **RECORDS** **WEATHER**. The Weather window will be displayed – see Figure 7-11.

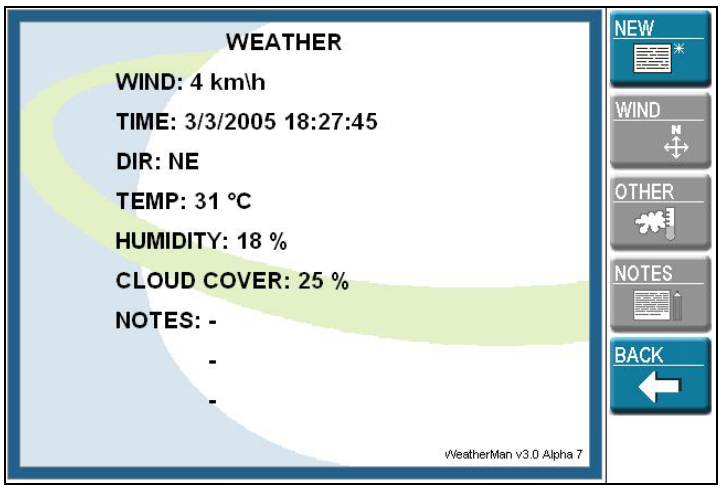


Figure 7-11: The Weather Window

2) To create a new weather record, touch the **NEW** button.

3) Touch **WIND** and enter a value for wind speed and direction.

4) Touch **OTHER** and enter values for temperature, humidity and cloud clover.

5) Touch **NOTES** and enter any extra comments or information.

6) Touch **BACK** and **OK** to confirm and save the new weather record. It is now displayed in the weather window.

7.1.10 Using Flags

Flags can be used to denote obstacles or regions of some significance in the field. Follow the procedure below when you want to use flags:

(See Section 8.4.3 for more detail)

1) Touch **RECORDS** **FLAGS**

2) Use any of the four markers to place a flag at the current vehicle location. Simply touch any of the four shape buttons: triangle, square, circle or cross.

3) Touch **BACK** **BACK** at any time to return to the main menu.

7.2 Driver Setup

Recording who is driving the vehicle is an important part of the quality assurance process. All drivers have slightly different characteristics. Some drive more accurately, some drive faster and some are better at running computer equipment. GuideTRAX V3 allows the current driver to be recorded along with the treatment information. If appropriate, drivers can be assigned a security level. This allows selected drivers to have access to change vehicle setup parameters to configure the system. It also prevents other drivers from changing key settings that may have detrimental consequences for the job.

Where driver security is important, password protection can be used so that security levels are strictly enforced.

7.2.1 Creating and Selecting a Driver

Follow the procedure below when you want to create and select a driver:

1) Touch **SETUP** **MORE** **MEMORY SETUP** **DRIVER**. The Driver Setup window is displayed – see Figure 7-12.

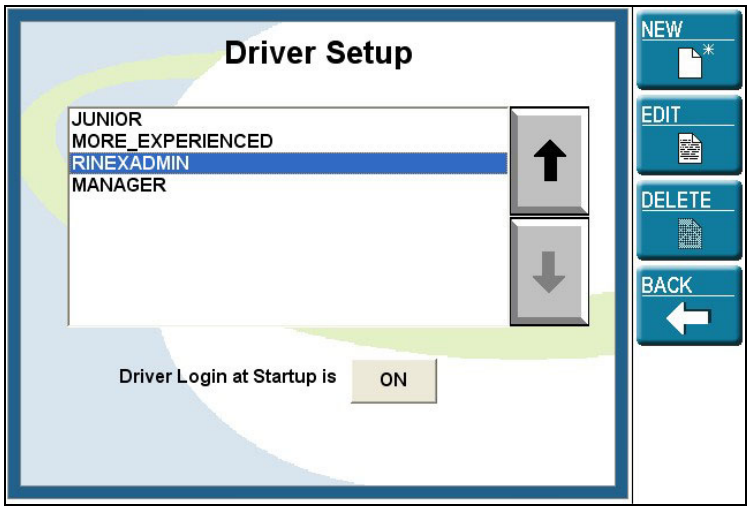


Figure 7-12: The Driver Setup Window

2) To create a new driver in the driver login window touch **NEW**.

3) Enter the driver name, select the user level (Low, Medium or High) and set a password (if required). See Section 8.3.15.2 for details of driver security levels.

4) Touch **ACCEPT** to save and return to the driver setup window.

5) Touch **BACK** **BACK** **BACK** to return to page 1 of the General Setup window.

6) Touch **CURRENT JOB** to open the Current Job window. Touch **DRIVER** to open the list of drivers.

7) To select (log in) a driver, select a driver name from the list and touch **SELECT**. You must enter the correct password if prompted.

8) Touch **EXIT SETUP** to return to the Main Menu.

7.3 Viewing Treatment History

(See Section 8.4.4.2 for more detail)

The History Window allows the user to view previous treatments and plans. By setting or using an appropriate filter all treatments can be searched to find a particular treatment. For example, the driver can view all treatments for the one field. Alternatively, the history could show all treatments finished for the current plan. Once the treatment has been found it can be viewed on the map screen.

7.3.1 Viewing a Saved Treatment

Follow the procedure below when you want to view a saved treatment:

1) Touch **RECORDS** **HISTORY**. The Treatment History Window is displayed.

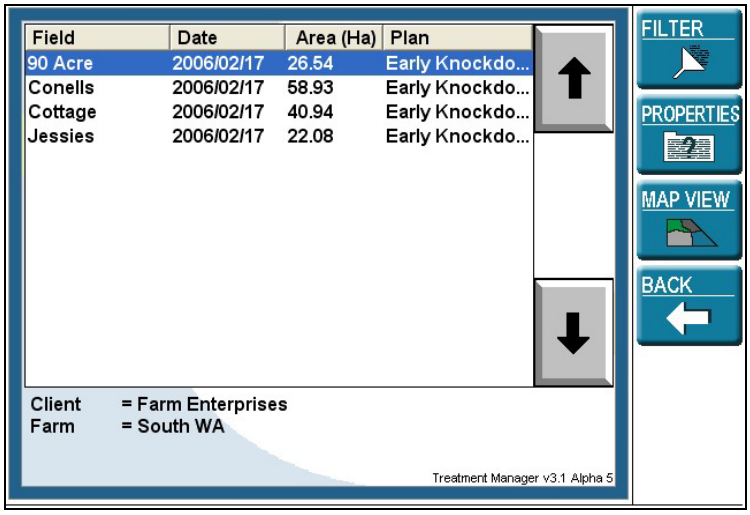


Figure 7-13: The Treatment History Window

2) Select a treatment to view from the list by touching to highlight it.

3) Touch **MAP VIEW**. Now use zoom buttons to manipulate the map view or touch directly on the farm map to zoom in on an area.

4) Touch **NEXT** consecutively to view map pages (if pages have been defined).

5) Touch **BACK** at any time to return to the Treatment History Window.

7.3.2 Viewing a Farm Map and Creating Pages

(See Section 8.4.4.3 for more detail)

Follow the procedure below when you want to view the farm map or create a page:

1) Touch **RECORDS** **HISTORY** to display the Treatment History window.

2) Touch **MAP VIEW** to display the farm map and create pages.

3) Press the **NEXT** button repeatedly to view map pages (if pages have been defined).

4) Touch **ZOOM ALL** to zoom out and view the entire farm map.

5) Repeatedly touch on a particular part of the map to zoom in.

6) To create a new map page, touch **PAGES**. The Page Setup menu will be displayed.

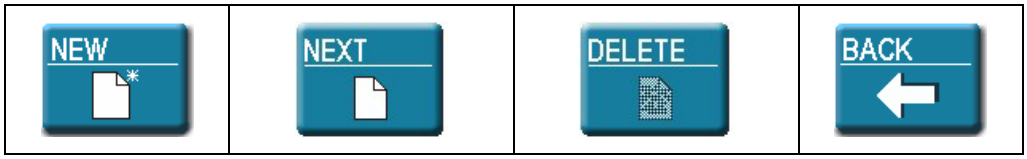


Figure 7-14: The Page Setup Menu Buttons

- Touching **NEW** will save the current display in the Map View Window as a page.
- Touching **NEXT** will display the next page of the map once pages have been saved.
- Touching **DELETE** will delete the current page being displayed.

7) Touch **BACK** **BACK** at any time to return to the Treatment History window.

7.3.3 Creating and Selecting a Filter

(See Section 8.4.4.1 for more detail)

Follow the procedure below when you want to create and select a filter:

1) Touch **RECORDS** **HISTORY** **FILTER**. The Select Filter Window is displayed.

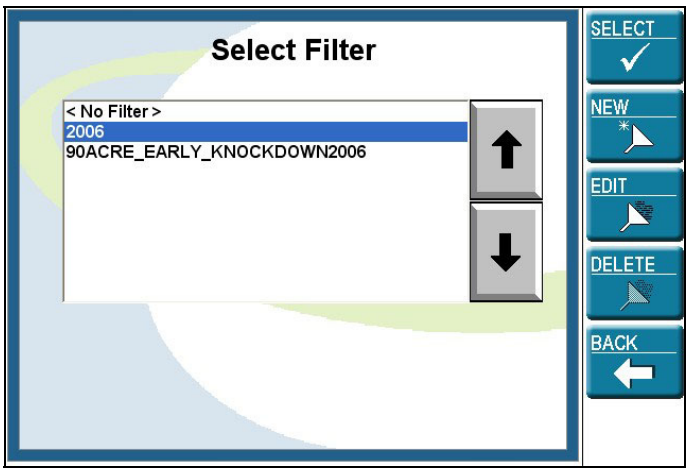


Figure 7-15: The Select Filter Window

2) To create a new filter, touch the **NEW** button.
   - Touch the Name button, enter a filter name and touch **OK**.
   - Touch the Season button, select the desired season from the list to show only treatment for that season (or ALL for all seasons) and touch **ACCEPT**.
   - Touch the Field button, select a specific field to show only treatments for that field (or ALL for all fields) and touch **ACCEPT**.
   - Touch the Plan button, select a specific plan to show only treatments for that plan (or ALL for all plans) and touch **ACCEPT**.
3) Touch **ACCEPT** to save the filter.
4) Select a filter from the list to sort treatments based on that filter's properties and touch **SELECT** to return to the now filtered treatment list in the treatment history window.

7.4 Creating Products

Follow the procedure below when you want to create products:

1) Touch **SETUP** **MORE** **MEMORY SETUP** **PRODUCT**. The Product Setup Window is displayed.

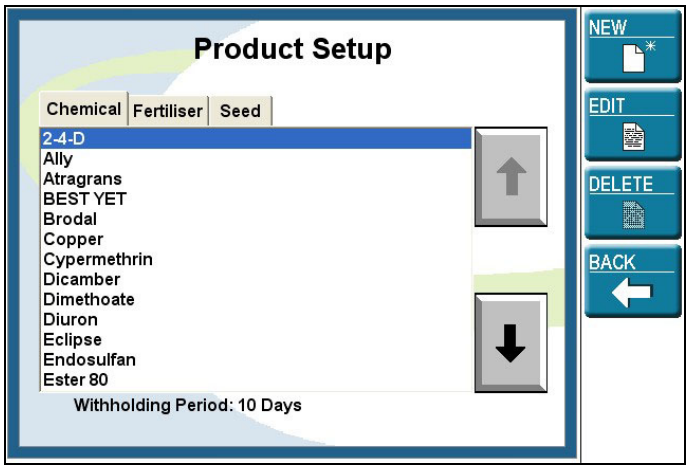


Figure 7-16: The Product Setup Window

2) Touch the appropriate product tab (Chemical, Fertiliser or Seed). The selected product type's setup window is displayed. The New Chemical Window is shown in Figure 7-17. See Sections 8.3.15.3 and 8.4.1.4 for more details of product windows.

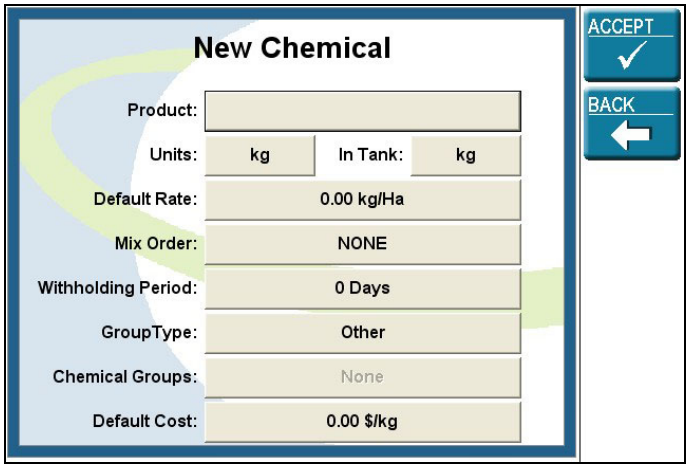


Figure 7-17: The New Chemical Window

3) Touch each button to enter the product's properties as required and when finished touch **ACCEPT** to save the product.

4) The new product is now displayed in the Product Setup Window

7.5 AutoFIELD

When you use the system for the first time, there will be no farm map available and thus AutoFIELD will not function. There are 2 methods to create a farm map on a new system:

- Create the farm maps on you PC using the Mapping function in the RINEX PlanIT Office Management software, then export the farm map to your GuideTRAX V3system.
- Use treatment data obtained in the field to generate field boundaries automatically with GuideTRAX V3.

This section describes the necessary steps for creating a farm map out in the field using GuideTRAX V3. If you would like to obtain and/or learn how to use the PlanIT Office Management software, please refer to the PlanIT documentation.

7.5.1 Mapping

To create a field boundary (or map) for a particular field, follow the procedure below:

1) Start GuideTRAX V3 and drive to a field that has not been mapped (i.e. there is no farm map).
2) Ensure the correct Client and Farm are selected in **SETUP CURRENT JOB**
3) Turn the Master Switch ON and proceed to drive and complete a boundary lap around the field while recording the treatment in GuideTRAX V3.
4) Once you have returned to the point of origin, you can continue to treat the remainder of the field by your preferred method.

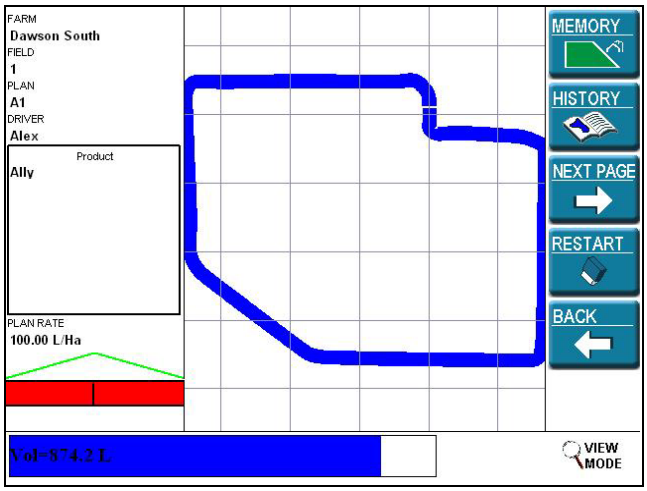


Figure 7-18: Completed Boundary Lap Around Field

5) Once the treatment is complete, press **FIELD** **MEMORY** **ARCHIVE** to store the treatment permanently to disk.

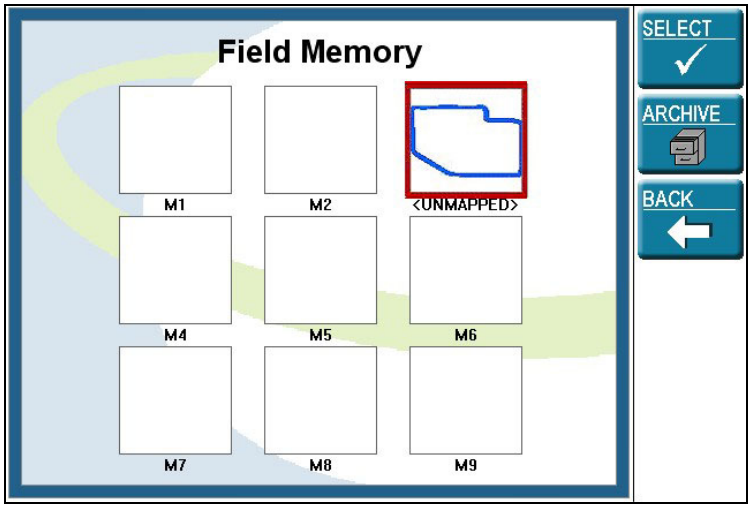


Figure 7-19: Archive The Field From Memory

6) A message will appear requesting a name either be selected from a list or a new name be created.

7) Create the new field name and touch **OK**.

8) Use the ↑ and ↓ buttons to highlight the new field name in the list and touch **SELECT**.

9) Another message (see Figure 7-20) will appear informing you that this treatment can be used to create a field boundary. Touch **OK** to confirm this action.

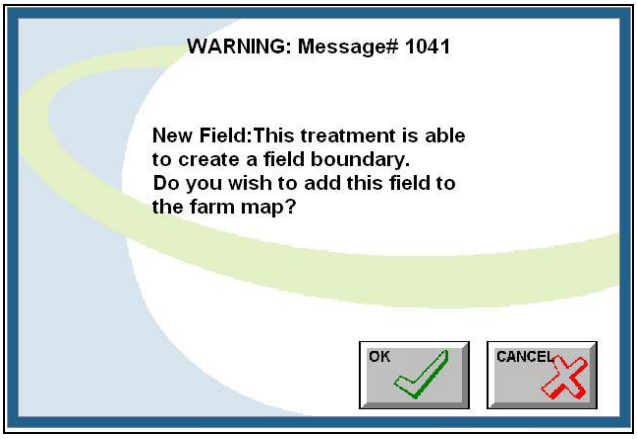

WARNING: Message# 1041
New Field:This treatment is able to create a field boundary.
Do you wish to add this field to the farm map?
OK
CANCEL

Figure 7-20: Touch OK To Create A Field Boundary

10) Observe the confirmation message that the treatment has been successfully archived and touch **OK** **BACK** **BACK**. The field boundary should now be displayed as shown in Figure 7-21.

11) If the map you just created is not visible, press **SETUP** **AutoFIELD** and make sure that Background Map is ON.

12) Touch **EXIT SETUP** to return to the main GuideTRAX V3 screen. The map should now be displayed with the vehicle inside the field boundary if you have not moved out of the treated field.

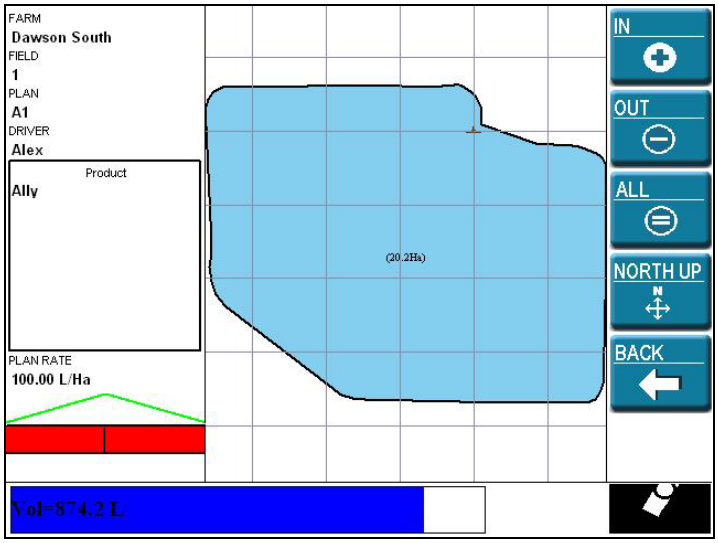


Figure 7-21: The Field Boundary

8

The Menu System

GuideTRAX V3 software is operated and configured by a menu system. The menu comprises of a choice of buttons which will have an action upon GuideTRAX V3. As previously described the button is accessed by touching or tapping the appropriate part of the screen.

The GuideTRAX V3 menu comprises of up to five buttons aligned along the right hand side of the screen. Touching any one of these buttons will either activate the function associated with the button or lead to a sub-menu. A sub-menu is similar to the main menu whereby touching the button may either activate a function or lead to a further sub-menu.

This manual refers to the Main menu as that which is shown when the system is first started.

A useful rule of thumb is that if the menu does not show a **BACK** button then the system is at the Main menu.

This section describes the function of each button and options which can be set in each menu and sub-menu.

8.1 Menu Layout

One of the integral philosophies of the GuideTRAX V3 menu is that regardless of the software version, the HL, HT, or HR, the menu system should be essentially the same. This is to ensure that as users requirements are expanded there is a common structure and immediate recognition of the menu layout.

Consequently some of the buttons will have no effect in particular versions of GuideTRAX V3 software. In these cases the button is typically greyed out indicating to the user that the button is not available or has no effect in that particular version of GuideTRAX V3.

The Saturn HR menu is illustrated in Figure 8-1 with the Main menu shown across the page and the sub-menus shown down the length of the page.

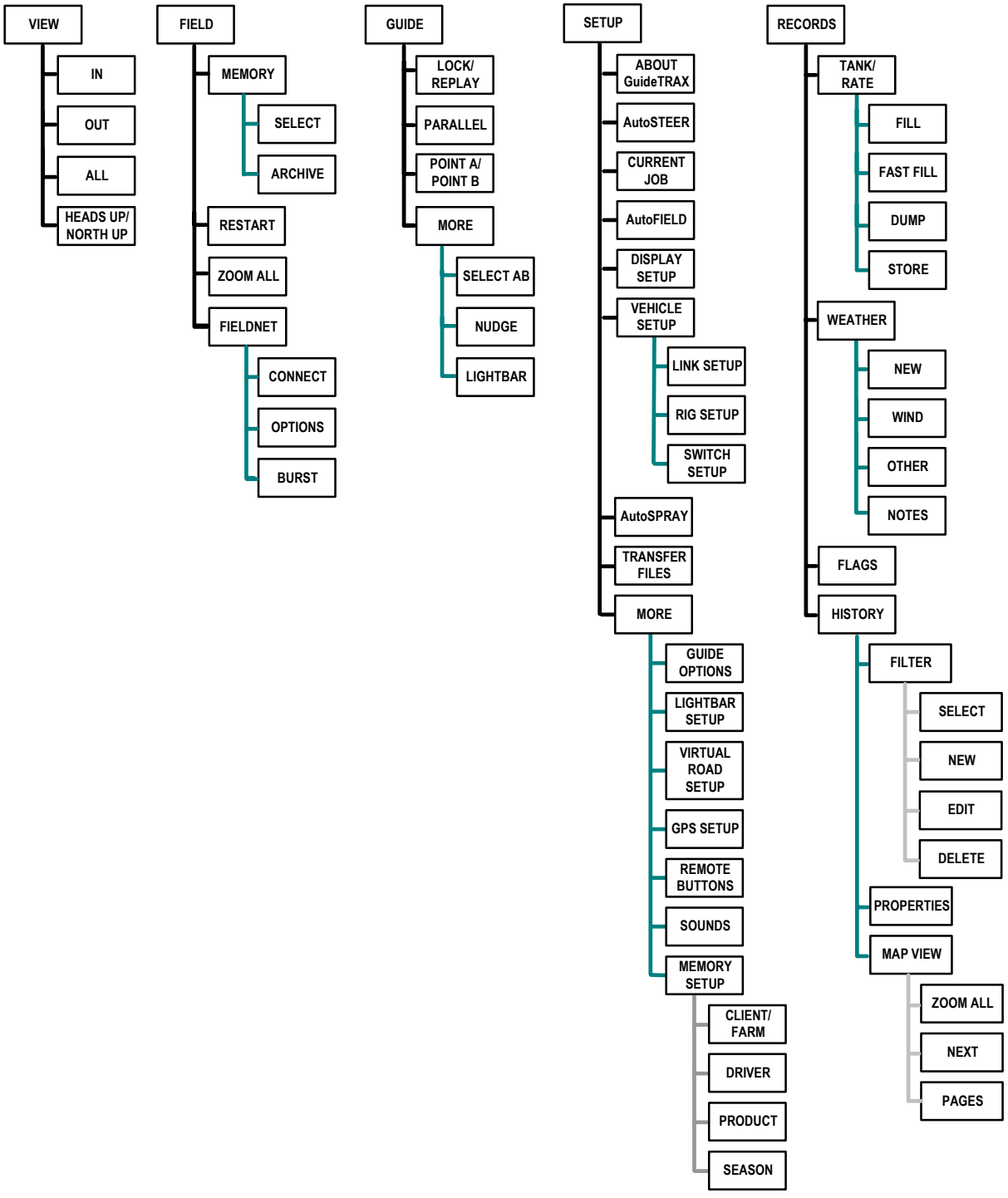


Figure 8-1: The HR Menu Layout

8.2 The Main Menu

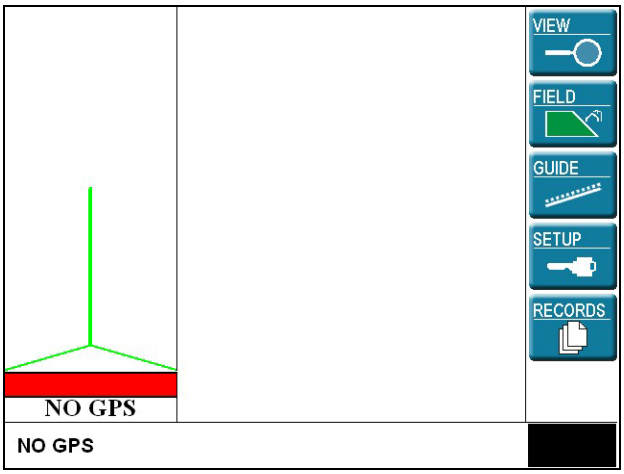


Figure 8-2: The Main Menu

Overview: The Main menu, as illustrated in Figure 8-2 is always displayed when the Saturn H system is started. The Main menu provides access to the sub-menus for configuration and operation of the system.

Name	Button	Function
VIEW Button		The VIEW button accesses the View menu which allows the map screen view to be changed.
FIELD Button		The FIELD button accesses the Field menu to start, stop and archive fields. The Field menu also has access to FieldNET features if enabled.
GUIDE Button		The GUIDE button accesses the Guide menu to activate all forms of vehicle guidance.
SETUP Button		The SETUP button accesses the General Setup menu which allows the system to be configured for optional devices and user preference. See Section 8.3 for a description of the General Setup menu.
RECORDS Button		The RECORDS button accesses the Records menu to allow saving and viewing previous treatment data. See Section 8.4 for a description of the Records menu.

8.2.1 View

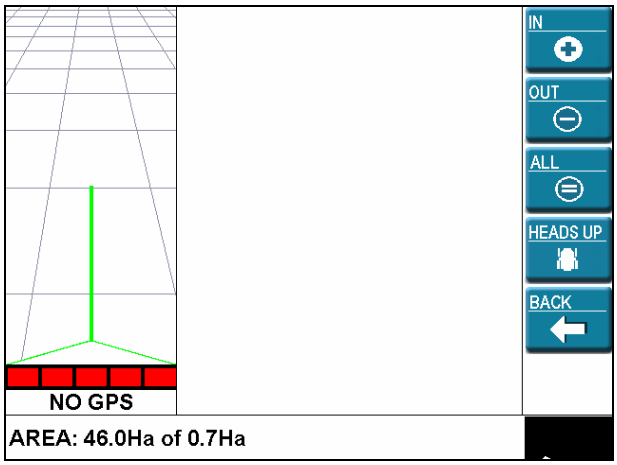


Figure 8-3: The View Menu

Overview: The View menu, as illustrated in Figure 8-3 configures the display characteristics of the Map Screen.

Name	Button	Function
IN Button		The IN button magnifies the image on the Map Screen based upon the central point of the screen.
OUT Button		The OUT button shrinks the image on the Map Screen based around the central point of the screen.
ALL Button		The ALL button displays all of the current field on the Map Screen. If there is no treated area in the current field, the button will have no effect.
HEADS UP / NORTH UP Button		This is a toggle button, it can be either HEADS UP or NORTH UP. The button toggles the Map Screen between the two modes, Heads or North Up. The Map Screen will be in the Heads Up mode when the HEADS UP button is displayed.
BACK Button		The BACK button returns the system to the Main Menu.

8.2.2 Field

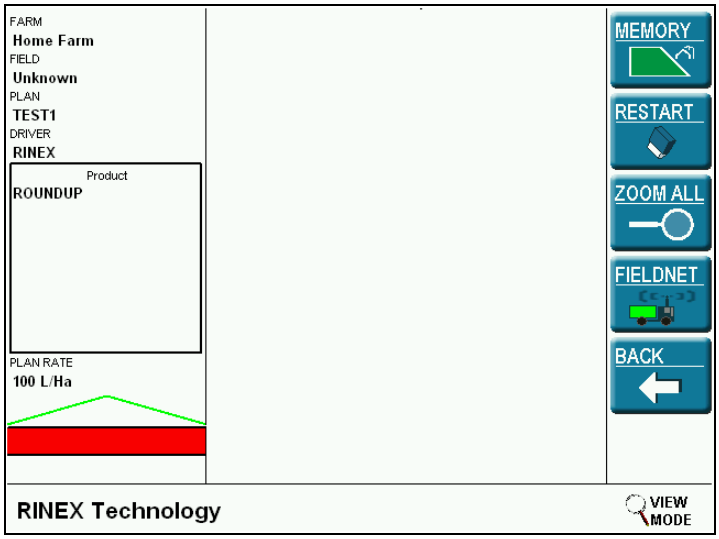


Figure 8-4: The Field Menu

Overview: The Field menu, as illustrated in Figure 8-4, will be displayed when the FIELD button in the Main menu is pressed. This menu allows fields to be started, stopped, saved and to view information pertaining to fields, as well as allowing access to FieldNET.

Name	Button	Function
MEMORY Button		The MEMORY button selects the Virtual Memory to change the current memory slot or to Archive field Data
RESTART Button		The RESTART button clears information stored in the current field.
ZOOM ALL Button		The ZOOM ALL button displays all of the current field on the Map Screen. In this view touching on the Map screen will zoom in on that area.
FIELDNET Button		The FIELDNET button selects the FieldNET window to enable communication with other FieldNET enabled vehicles.
BACK Button		The BACK button returns the system to the Main Menu.

8.2.2.1 Field Memory

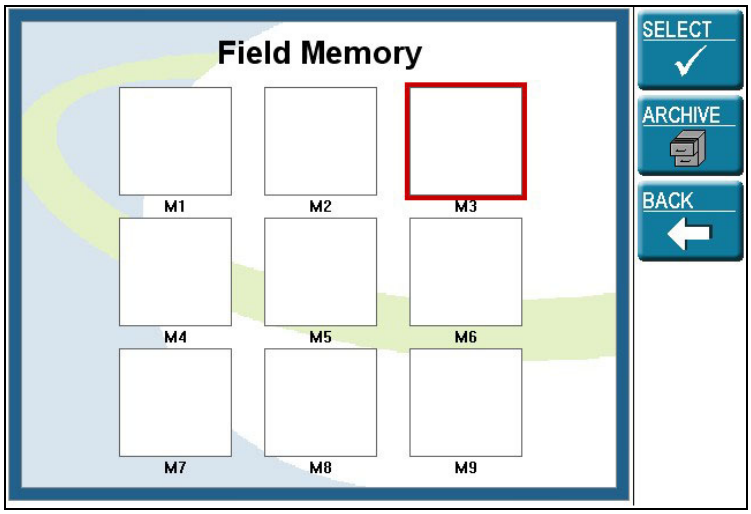


Figure 8-5: The FIELD MEMORY Window

Overview: The Field Memory window, as shown in Figure 8-5 allows selection of a memory slot to be used as the current field. Memory slots which contain treatment data will display a miniature image of the treatment data recorded in the field.

Access: FIELD MEMORY

Name	Function
M1 to M9	The memory slots are represented as squares (not buttons) and are labelled M1 to M9 respectively. The current selected memory slot will be indicated with a red border as illustrated in Figure 8-5 When a new field is selected, the border around the current memory slot changes to grey and the new memory slot will be indicated with a red border.
SELECT Button	The SELECT button will load the selected memory slot, close the window and return to the previous Menu.
ARCHIVE Button	The ARCHIVE button will record the treatment data in the current field to the permanent memory, and then clear the memory slot.
BACK Button	The BACK button will close the Window and return to the previous Menu without changing the currently loaded memory slot.

8.2.2.2 Restart Field

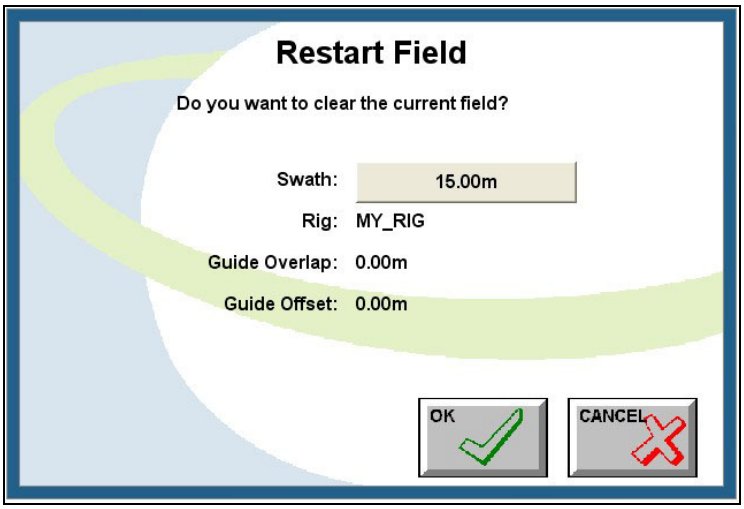


Figure 8-6: The RESTART FIELD Window

Overview: The Restart Field window, see Figure 8-6 clears data currently stored in the field. It also displays the vehicle and guidance parameters that pertain to data for the current field.

Access: **FIELD** **RESTART**

Name	Function
SWATH Button	The SWATH button will be displayed if the rig is setup with one section. Touching the Swath button allows the swath width to be changed in the Restart window. If the rig has more than one section, the swath width must be changed in **SETUP** **VEHICLE SETUP** **RIG SETUP** **EDIT** **BOOM SETTINGS**
OK Button	The OK button clears all treatment data in the current memory slot, updates any changes to the vehicle, closes the window and returns to the Main menu.
CANCEL Button	The CANCEL button will ignore any selected actions, close the window and return to the Field menu.

8.2.3 FieldNET

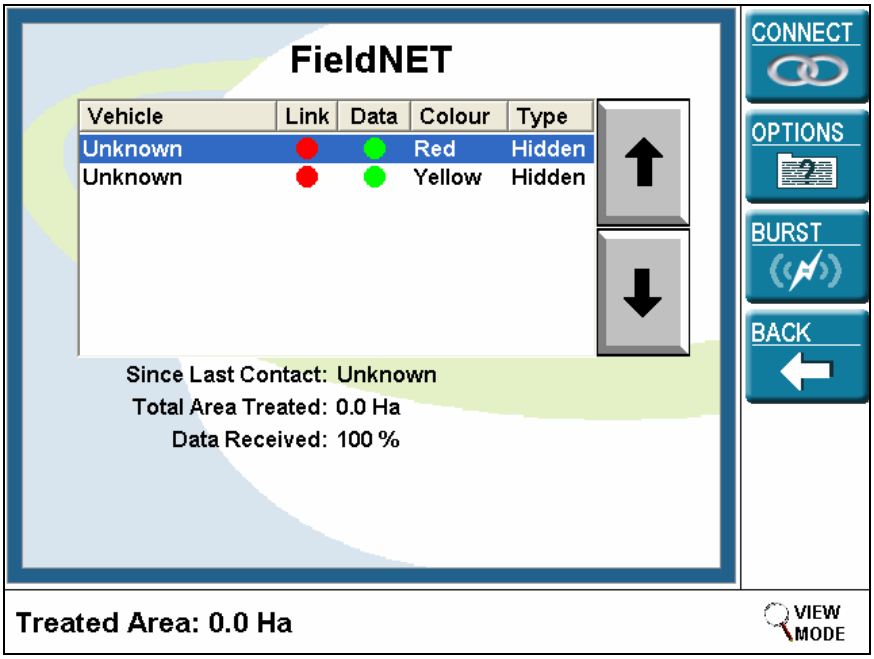


Figure 8-7: The FieldNET Window

Overview: The FieldNET window, see Figure 8-7 allows information about the vehicles in the FieldNET group to be displayed. From the FieldNET window a link to another vehicle can be set or information transferred between selected vehicles.

Access: FIELD FIELDNET

Item	Description
CONNECT Button	The CONNECT button will create a link to the selected vehicle so treatment information from that vehicle will appear on the map screen.
OPTIONS Button	The OPTIONS button will open the FIELDNET OPTIONS window.
BURST Button	The BURST button will stop normal FieldNET communication between the group of vehicles and start a fast transfer of data from the selected vehicle.
BACK Button	The BACK button will close the window and return to the Field menu.

Item	Description
VEHICLE Column	The VEHICLE column displays all the vehicles in the FieldNET group.
LINK Column	The LINK column indicates if a link has been setup with the relevant vehicle. Green indicates a current link and Red indicates no link.
DATA Column	The DATA column indicates the likelihood that there is treatment done by that vehicle which has not been transferred. See Section 11.3.4 for more information about the data status indicator.
COLOUR Column	The COLOUR column displays the colour of the treatment map produced by the associated vehicle.
TYPE Column	The TYPE column displays the link type as set in **FIELD** **FIELDNET** **OPTIONS**

8.2.3.1 FieldNET Options

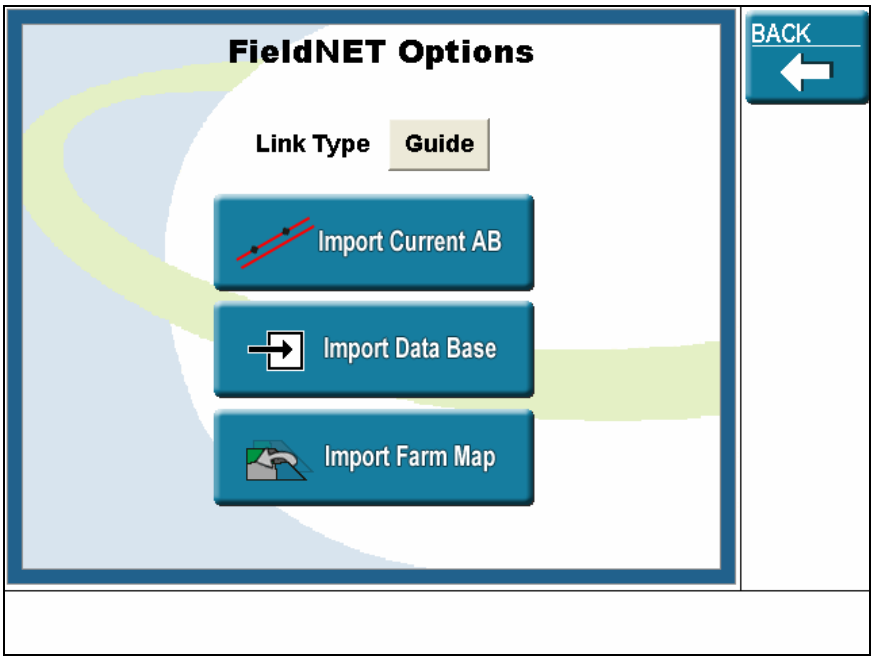


Figure 8-8: The FieldNET Options Window

Overview: The FieldNET Options window, see Figure 8-8 allows the method to be set for working with data from other vehicles and also allows information from other vehicles in the group to be imported.

Access: FIELD FIELDNET OPTIONS

Item	Description
LINK TYPE Button	The LINK TYPE button toggles between HIDDEN, DISPLAY and GUIDE: HIDDEN: No data displayed from the other vehicle. DISPLAY: Data from the other vehicle is displayed as a separate layer under the current treatment map. GUIDE: Data from the other vehicle is treated as if it is part of the current treatment.
IMPORT CURRENT AB Button	The IMPORT CURRENT AB button will import the current AB points set in the selected vehicle, and replace any AB points currently set in your vehicle.

Item	Description
IMPORT DATABASE Button	The IMPORT DATABASE button will import the database information from the selected vehicle, and merge the data into the database of your vehicle.
IMPORT FARM MAP Button	The IMPORT FARM MAP button will import the farm map from the selected vehicle and replace the current farm map of your vehicle.
BACK Button	The BACK button will close the window and return to the FieldNET window.

8.2.4 Guide

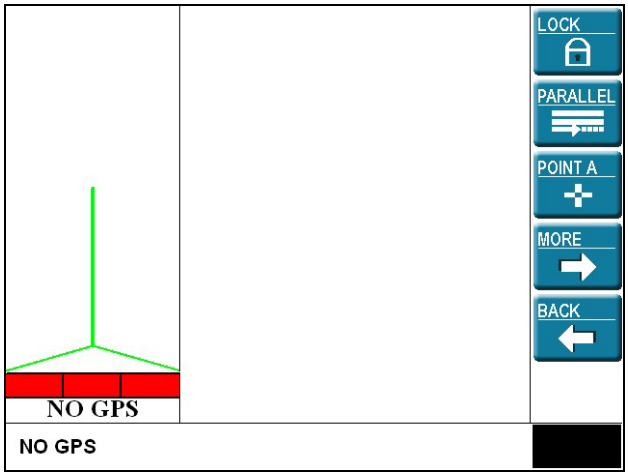


Figure 8-9: The Guide Menu

Overview: The Guide menu as illustrated in Figure 8-9 allows the system to be configured and selected for vehicle guidance.

Name	Icon	Function
LOCK / LOCK OFF/ GUIDE OFF Button		This is a toggle button which either invokes or cancels Lock guidance. To invoke guidance the LOCK button will be visible, once activated it will toggle the button to LOCK OFF. The button will stay in the LOCK OFF state until the system finds lock, when it will change to GUIDE OFF. If it loses lock, the button will change back to the LOCK OFF state. To cancel Lock guidance touch the GUIDE OFF or LOCK OFF button. The button will then toggle to LOCK. The LOCK button is displayed when LOCK mode has been selected in **SETUP MORE GUIDE OPTIONS** – see Section 8.3.9.

Name	Icon	Function
REPLAY / REPLAY OFF /GUIDE OFF Button		This is a toggle button which either invokes or cancels RePLAY guidance. To invoke guidance the REPLAY button will be visible, once activated it will toggle the button to REPLAY OFF. The button will stay in the REPLAY OFF state until the system finds lock, when it will change to GUIDE OFF. If it loses lock, the button will change back to the REPLAY OFF state. To cancel RePLAY guidance touch the GUIDE OFF or REPLAY OFF button. The button will then toggle to REPLAY. The REPLAY button assumes the place of the LOCK button when REPLAY mode has been selected in **SETUP MORE GUIDE OPTIONS** – see Section 8.3.9.
PARALLEL / GUIDE OFF Button		This is a toggle button which either invokes or cancels parallel guidance. To invoke guidance the PARALLEL button will be visible, once activated it will toggle the button to GUIDE OFF. To cancel parallel guidance touch the GUIDE OFF button. The button will then toggle to PARALLEL.
POINT A/ POINT B Button		This is a toggle button, it either sets Point A or Point B for parallel guidance. To set guide Point A the POINT A button will be visible, once set the button will toggle to POINT B. Once Point B has been set the button will toggle to POINT A.
MORE Button		The MORE button selects the Guide More menu, to allow access to the Nudge guideline option and to allow adjustment of lightbar intensity.
BACK Button		The BACK button returns the system to the Main Menu.

8.2.4.1 Guide More Menu

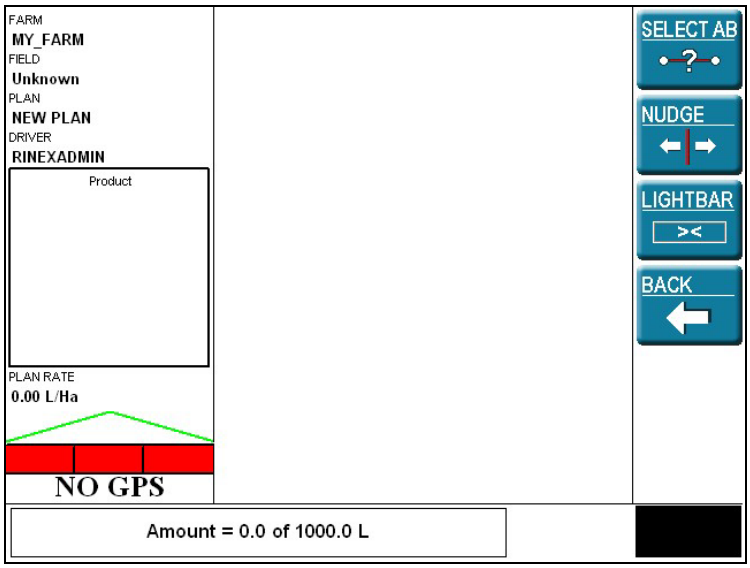


Figure 8-10: Guide More Menu

Overview: The Guide More menu, see Figure 8-10 is for selecting and configuring Guide options.

Access: GUIDE MORE

Name	Button	Function
SELECT AB Button		The SELECT AB button displays a list of stored AB points for the current field.
NUDGE Button		The NUDGE button allows the GPS guideline to be temporarily adjusted.
LIGHTBAR Button		The LIGHTBAR button will display the Lightbar Intensity window.
BACK Button		The BACK button returns the system to the Guide menu.

8.2.4.2 Select AB

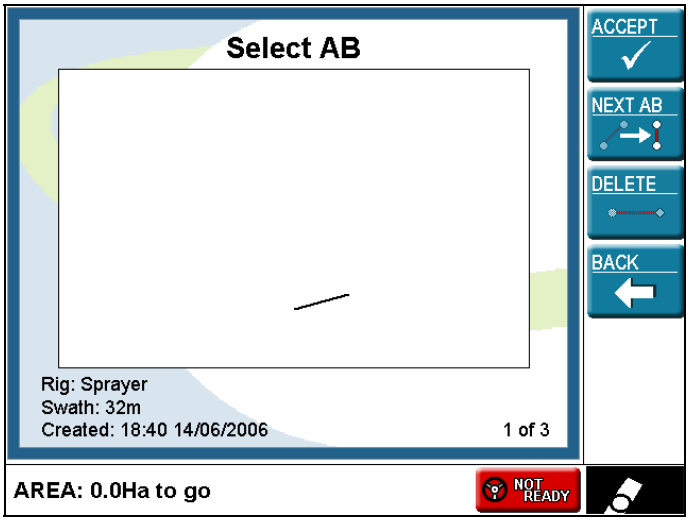


Figure 8-11: The Select AB Window

Overview: The Select AB window, see Figure 8-11 allows pairs of AB points to be selected for use in the current treatment job.

Access: GUIDE MORE SELECT AB

Name	Function
ACCEPT Button	The ACCEPT button selects the currently displayed pair of AB points for use in the current treatment job.
NEXT AB Button	The NEXT AB button displays the next pair of AB points for this field.
DELETE AB Button	The DELETE AB button displays a message seeking confirmation to delete the selected AB points, and when OK is touched, the selected pair of AB points is deleted. The driver selected in SETUP CURRENT JOB DRIVER must have high level security in order to delete AB points. Refer to Section 7.2 for more information.
BACK Button	The BACK button will ignore any selected actions, close the Window and return to the previous Menu.
RIG Field	The RIG field displays the name of the vehicle rig that created the selected pair of AB points.

SWATH Field	The SWATH field displays the swath width that was used to create the selected pair of AB points.
CREATED Field	The CREATED field displays the date and time when the selected pair of AB points were created.
# OF # Field	The # OF # (where # represents a digit) refers to the current AB points out of the total number of AB points stored for this field. In Figure 8-11 the 3rd set of AB points is displayed out of a total of 3 pairs for the current field.

8.2.4.3 Nudge

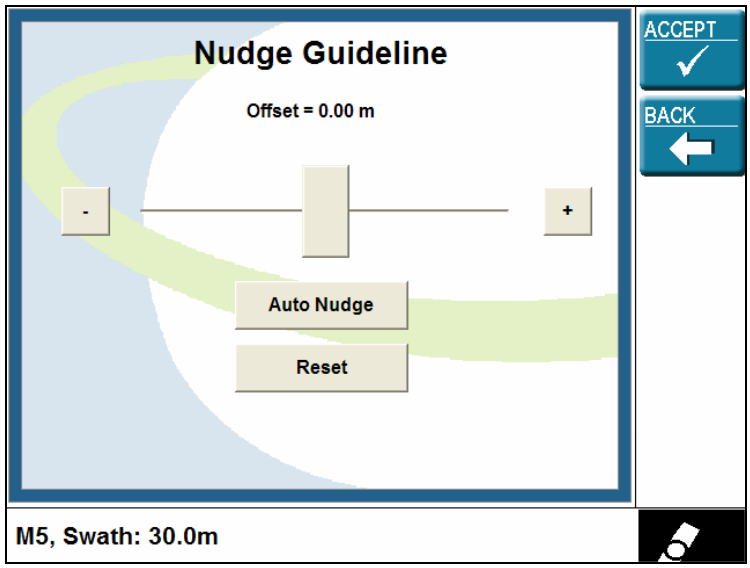


Figure 8-12: The Nudge Guideline Window

Overview: The Nudge Guideline window, see Figure 8-12, allows the parallel guideline to be temporarily adjusted either left or right to allow for GPS drift.

Access: GUIDE MORE NUDGE

Name	Function
OFFSET Value	The OFFSET Value indicates how much the parallel guideline will be moved left or right from the original set AB points.
SLIDER BAR	Dragging the SLIDER BAR to the left or right will increase or decrease the Offset value as the bar is moved left or right. The ACCEPT button must be pressed for the new offset value to take effect.
+/- Buttons	The + and – buttons will step the offset value up or down by 0.01m each time they are pressed.
AUTO NUDGE Button	When pressed, the AUTO NUDGE button will cause the offset value to be automatically calculated based on how far the vehicle is offline. The ACCEPT button must be pressed for the new offset value to take effect.

Name	Function
RESET Button	The RESET button will set the Offset value back to 0.
ACCEPT Button	The ACCEPT button will close the Window, return to the previous Menu and cause the parallel line to be adjusted left or right by the offset value.
BACK Button	The BACK button will return you to the previous screen, but will not move the guideline.

- **Lightbar Intensity**

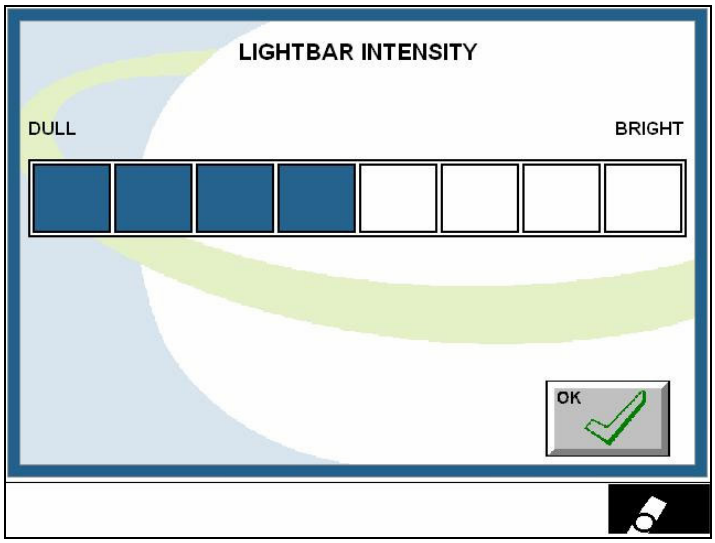


Figure 8-13: The Lightbar Intensity window

Overview: The Lightbar Intensity window, see Figure 8-13 controls the brightness of the optional lightbar.

Access: GUIDE MORE LIGHTBAR

Name	Function
DULL/ BRIGHT Buttons	The squares between DULL and BRIGHT are buttons which control the brightness (intensity) of the optional lightbar.
OK Button	The OK button will update the selected actions, close the Window and return to the previous Menu.

8.3 General Setup

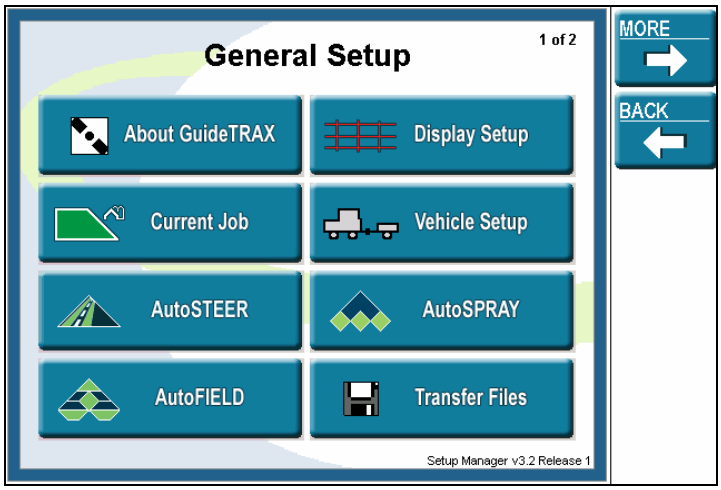


Figure 8-14: The General Setup Menu Page 1

Overview: The General Setup menu Page 1, as illustrated in Figure 8-14 allows the system to be configured for optional devices and user preferences.

Access: SETUP

Name	Function
ABOUT GUIDETRAX Button	The ABOUT GUIDETRAX button selects the About GuideTRAX window to allow registration options, such as AutoSPRAY. It also provides useful system information including software version.
CURRENT JOB Button	The CURRENT JOB button selects the Current Job window where the driver, client and farm can be set for the current job.
AutoSTEER Button	The AutoSTEER button selects the AutoSTEER window to allow AutoSTEER to be turned ON or OFF. AutoSTEER is only available in HR if it has been optioned.
AutoFIELD Button	The AutoFIELD button selects the AutoFIELD window to allow configuration of AutoFIELD.

Name	Function
DISPLAY SETUP Button	The DISPLAY SETUP button selects the Display Setup window to allow configuration of the display screen and Status Bar.
VEHICLE SETUP Button	The VEHICLE SETUP button selects the Vehicle Setup window to allow configuration of Links, Rigs and Switches.
AutoSPRAY Button	The AutoSPRAY button selects the AutoSPRAY window to allow configuration of AutoSPRAY. AutoSPRAY is only available in HR if it has been optioned.
TRANSFER FILES Button	The TRANSFER FILES button selects the Transfer Files window to allow data to be imported and exported.
MORE Button	The MORE button selects Page 2 of the General Setup menu
BACK Button	The BACK button returns the system to the main Menu.

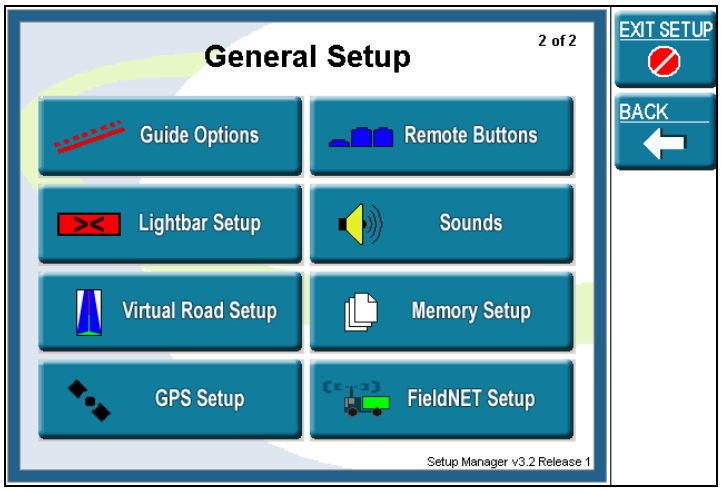


Figure 8-15: The General Setup Menu Page 2

Overview: The General Setup menu Page 2, as illustrated in Figure 8-4 allows the system to be configured for optional devices and user preferences.

Access: **SETUP** **MORE**

Name	Function
GUIDE OPTIONS Button	The GUIDE OPTIONS button selects the Guide Options window to allow configuration of guidance settings such as guide overlap, offset and lock search direction.
LIGHTBAR SETUP Button	The LIGHTBAR SETUP button selects the Lightbar Setup window to allow configuration of lightbar limits and communication speed.
VIRTUAL ROAD SETUP Button	The VIRTUAL ROAD SETUP button selects the Virtual Road Setup window to allow configuration of Virtual Road dimensions.
GPS SETUP Button	The GPS SETUP button selects the GPS Setup window to allow configuration of communication speed and level of accuracy.
REMOTE BUTTONS Button	The REMOTE BUTTONS button will display the Remote Buttons window for the external button box (optional).

Name	Function
SOUNDS Button	The SOUNDS button selects the Sound Setup window to turn sound on/off and enable volume adjustment if speakers or headphones are connected to the Saturn H interface unit.
MEMORY SETUP Button	The MEMORY SETUP button selects the Memory Setup menu to allow setting up the current season, entering Client, Farm and Field names.
FIELDNET SETUP Button	The FIELDNET SETUP button selects the FieldNET window to allow FieldNET to be turned On or Off and the number of radios in the group and their identities to be set up.
EXIT SETUP Button	The EXIT SETUP button returns the system to the Main menu.
BACK Button	The BACK button returns the system to Page 1 of the General Setup menu.

8.3.1 About GuideTRAX

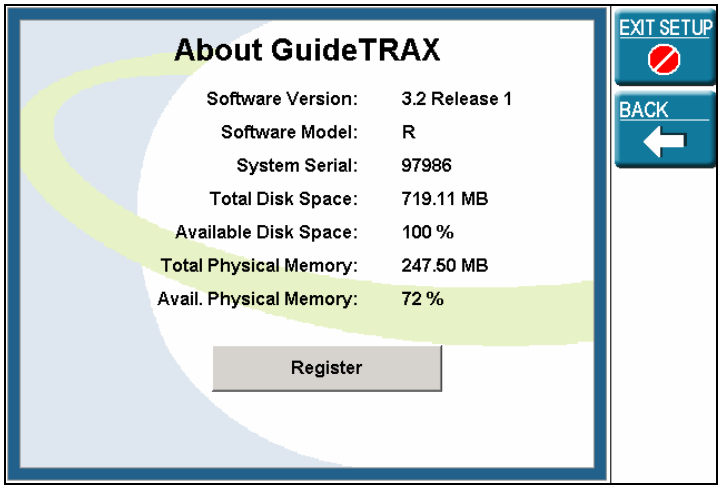


Figure 8-16: About GuideTRAX Window

Overview: The About GuideTRAX window, see Figure 8-16 displays the version of software and pertinent information on the Saturn H system and allows the registration of optional extras (AutoSPRAY, AutoSTEER and/or FieldNET).

Access: **SETUP** **ABOUT GuideTRAX**

Name	Function
REGISTER Button	The REGISTER button opens the Register GuideTRAX window.
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.1.1 Register

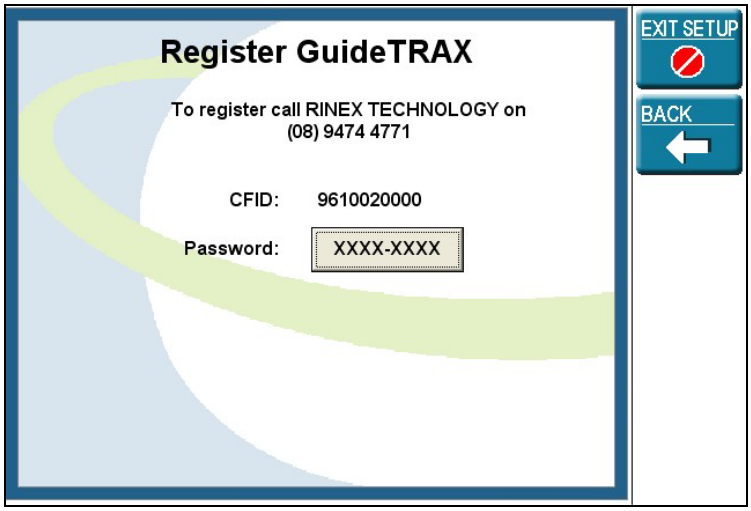


Figure 8-17: Register GuideTRAX Window

Overview: The Register GuideTRAX window, see Figure 8-17 allows entry of a Password (registration code).

Access: **SETUP** **ABOUT GUIDETRAX** **REGISTER**

Name	Function
PASSWORD Button	The PASSWORD button selects the keyboard to allow the password (registration code) to be entered. The password must be obtained from RINEX.
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the window and return to the previous Menu.

8.3.2 Current Job

Figure 8-18: The Current Job Window

Overview: The Current Job window, see Figure 8-18 allows selection of the Driver, Client and Farm details for the current treatment job.

Access: **SETUP** **CURRENT JOB**

Name	Function
DRIVER Button	The DRIVER button displays the Driver Login window, to allow the driver who will be performing the job to be selected and log in.
CLIENT Button	The CLIENT button displays the Client window to allow the correct client for the current job to be selected.
FARM Button	The FARM button displays the Farm window to allow the correct farm for the current job to be selected.
SEASON Field	The SEASON field displays the current season. See Section 8.3.15.4 for information on changing the season.
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.2.1 Driver Login

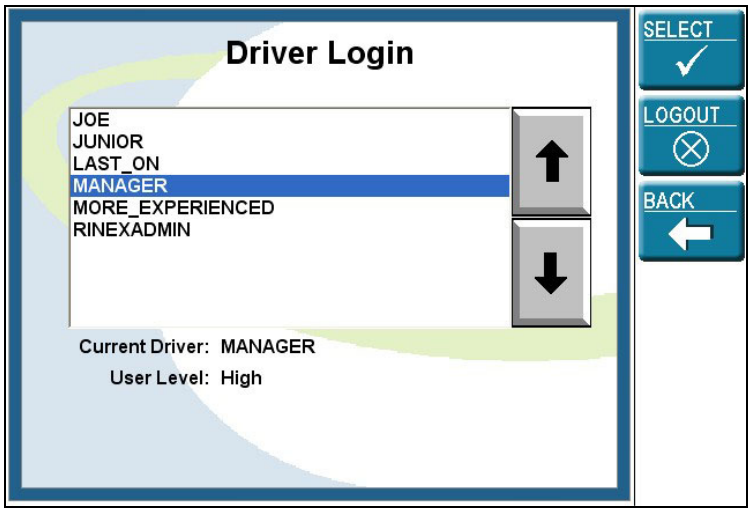


Figure 8-19: The Driver Login Window

Overview: The Driver Login Window, see Figure 8-19 allows the driver for the current job to be selected and to logout if required.

Access: SETUP CURRENT JOB DRIVER

Name	Function
↑ (UP) Button	The UP button moves the selection bar up the list of available drivers.
↓ (DOWN) Button	The DOWN button moves the selection bar down the list of available drivers
SELECT Button	The SELECT button selects the currently highlighted driver, closes the window and returns to the Current Job window. If a password has been set in the Driver Setup window (see Section 7.2.1) an on-screen keyboard will be displayed requesting entry of the password.
LOGOUT Button	The LOGOUT button logs the current driver out so that if another driver attempts to use the system, the driver will be required to log in. See Section 7.2 for more details.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.2.2 Client

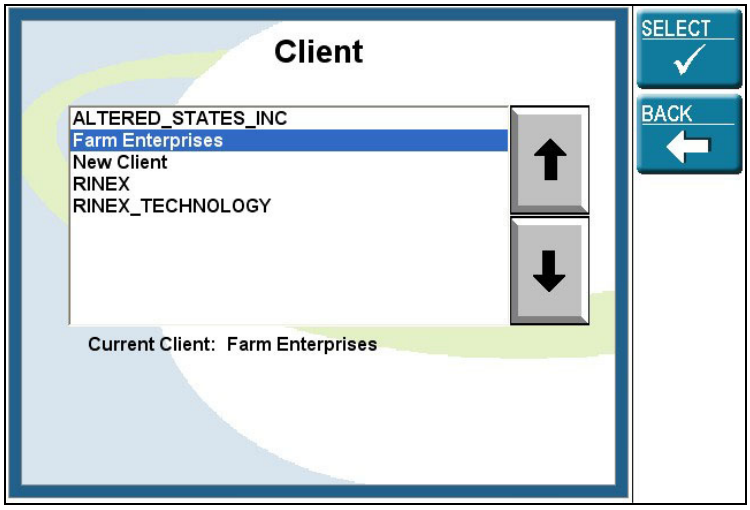


Figure 8-20: The Client Window

Overview: The Client window, see Figure 8-20 allows the correct client to be selected for the current job.

Access: **SETUP** **CURRENT JOB** **CLIENT**

Name	Function
(UP) Button	The UP button moves the selection bar up the list of available clients.
(DOWN) Button	The DOWN button moves the selection bar down the list of available clients
SELECT Button	The SELECT button selects the currently highlighted client, closes the window and returns to the Current Job window.
BACK Button	The BACK button will ignore any selected actions, close the Window and return to the Current Job window.

8.3.2.3 Farm

Figure 8-21: The Farm Window

Overview: The Farm window, see Figure 8-21 allows the correct farm to be selected for the current job.

Access: SETUP CURRENT JOB FARM

Name	Function
↑ (UP) Button	The UP button moves the selection bar up the list of available links.
↓ (DOWN) Button	The DOWN button moves the selection bar down the list of available links
SELECT Button	The SELECT button selects the currently highlighted farm, closes the window and returns to the Current Job window.
BACK Button	The BACK button will ignore the selected actions, close the window and return to the Current Job window.

8.3.3 AutoSTEER

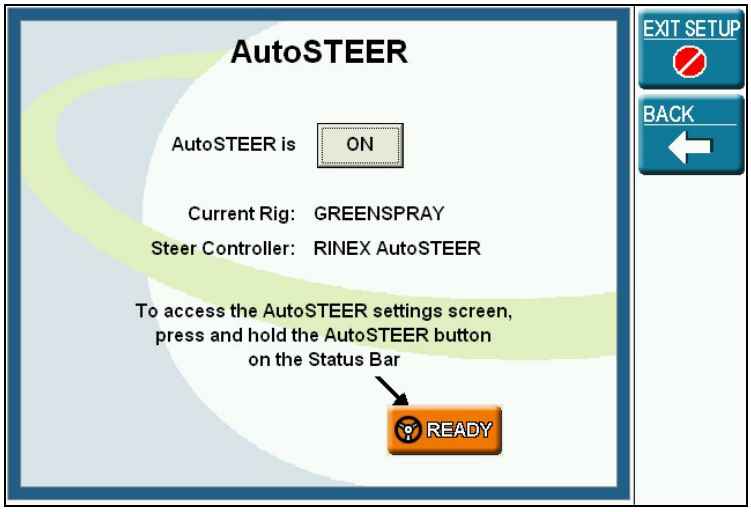


Figure 8-22: AutoSTEER Window

Overview: The AutoSTEER window, see Figure 8-22 displays the currently selected vehicle and steering controller and allows AutoSTEER to be turned ON or OFF.

Access: **SETUP** **AUTOSTEER**

Name	Function
AutoSTEER Button	The AutoSTEER button turns AutoSTEER ON or OFF.
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.4 AutoFIELD

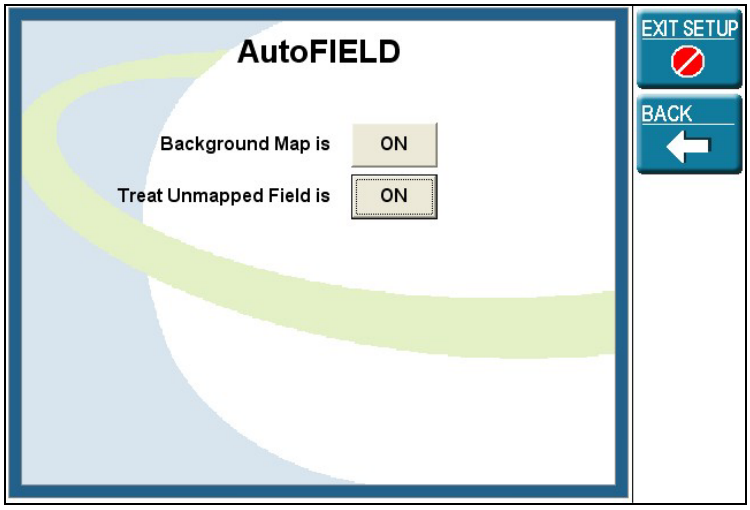


Figure 8-23: The AutoFIELD Window

Overview: The AutoFIELD window, see Figure 8-23 allows AutoFIELD to be configured.

Access: **SETUP** **AutoFIELD**

Name	Function
BACKGROUND MAP Button	The BACKGROUND MAP button if ON will display the farm map in the background of the Map Screen if a farm map exists. See Section 6.5.1 for more information
TREAT UNMAPPED FIELD Button	The TREAT UNMAPPED FIELD button if ON will allow a field which has not been included in the farm map to be treated. See Section 6.5.2 for more information.
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.5 Display Setup

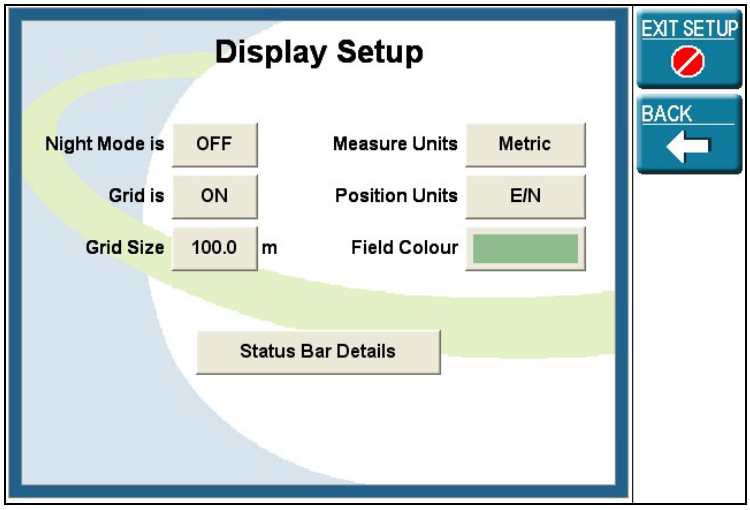


Figure 8-24: Display Setup Window

Overview: The Display Setup window, see Figure 8-24 allows the display screen to be configured and Status Bar messages to be selected.

Access: **SETUP** **DISPLAY SETUP**

Name	Function
NIGHT MODE Button	The NIGHT MODE button turns Night Mode ON or OFF. When ON, Night Mode turns the background from white to black. Text is then displayed in white, and Guide Points (A & B) are displayed in grey.
GRID Button	The GRID button turns the grid ON or OFF on the Map screen.
GRID SIZE Button	The GRID SIZE button selects a keyboard to enter a value for the grid spacing.
MEASURE UNITS Button	The MEASURE UNITS button allows units of measurement which are displayed on the screen to be set to either Metric or Imperial.

POSITION UNITS Button	The POSITION UNITS button sets how the position units will be displayed in the Status Bar. Units can be in either Cartesian coordinates (E/N - Easting & Northing) or geographical (Latitude & Longitude).
FIELD COLOUR Button	The FIELD COLOUR button displays a colour palette to enable the field colour to be set. This colour will override the default boundary colour set in the farm map.
STATUS BAR DETAILS Button	The STATUS BAR button selects the Status Bar window for selection of information to be displayed.
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.5.1 Status Bar Setup

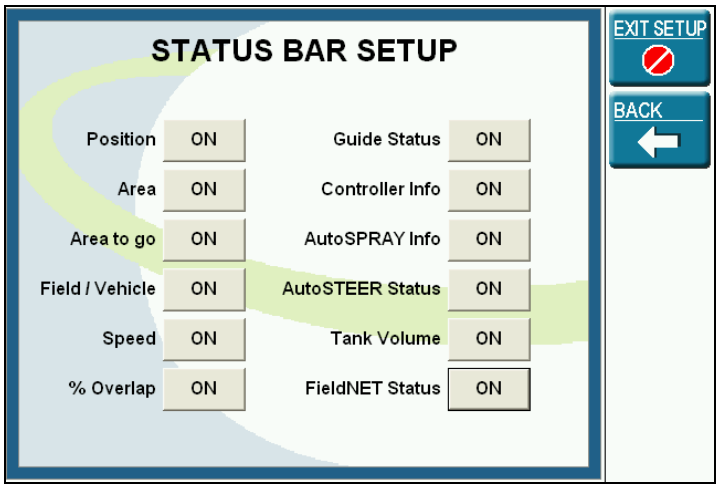


Figure 8-25: The Status Bar Setup Window

Overview: The Display Setup window, see Figure 8-25 allows the Status Bar messages to be selected.

Access: **SETUP** **DISPLAY SETUP**

STATUS BAR DETAILS

Each of the Status Bar Setup buttons can be toggled ON or OFF to turn the display of the corresponding Status Bar message on or off. See Section 2.6 for more information relating to Status Bar messages.

Name	Function
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.6 Vehicle Setup

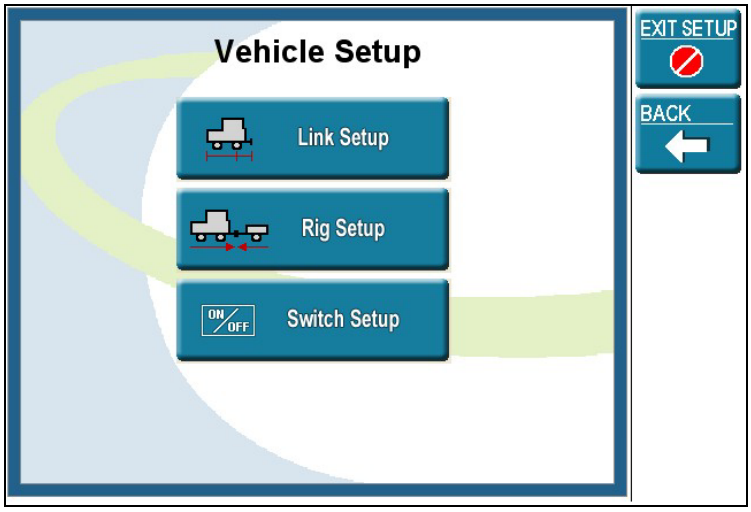


Figure 8-26: The Vehicle Setup Window

Overview: The Vehicle Setup window, see Figure 8-26 is for entering information on plant and equipment on the farm.

Access: **SETUP** **VEHICLE SETUP**

Name	Function
LINK SETUP Button	The LINK SETUP button will select the Link Setup window for selection and editing of links.
RIG SETUP Button	The RIG SETUP button will select the Rig Setup window to allow the rig to be edited.
SWITCH SETUP Button	The SWITCH SETUP button will select the Switch Setup window to allow switch selection.
EXIT SETUP Button	The EXIT SETUP button will close the window and return to the Main menu.
BACK Button	The BACK button will close the window and return to the previous Menu.

8.3.6.1 Link Setup

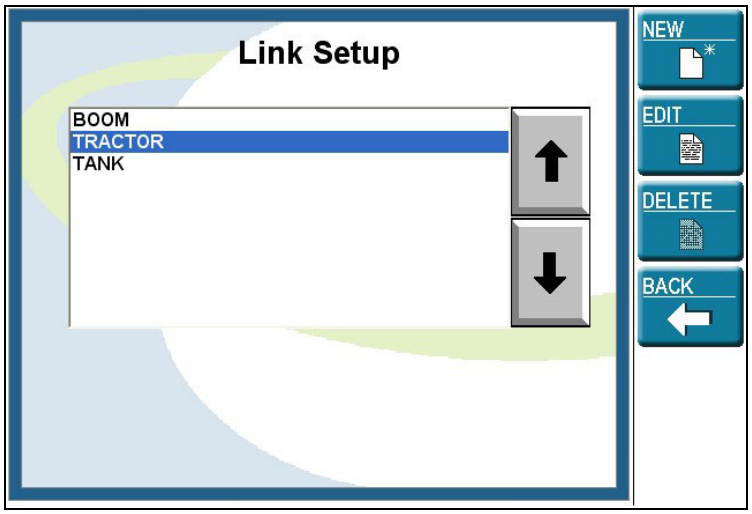


Figure 8-27: Link Setup Window

Overview: The Link Setup window as shown in Figure 8-27 allows the Vehicle and Implement Link details to be entered and edited as required.

Access: **SETUP** **VEHICLE SETUP** **LINK SETUP**

Name	Function
↑ (UP) Button	The UP button moves the selection bar up the list of available links.
↓ (DOWN) Button	The DOWN button moves the selection bar down the list of available links
NEW Button	The NEW button will select the Link Wizard to allow entry of a new link.
EDIT Button	The EDIT button will select the Link Wizard so the selected link maybe edited
DELETE Button	The DELETE button will delete the selected Link.
BACK Button	The BACK button will close the Window and return to the previous menu.

- **Link Setup Wizard Step 1**

Figure 8-28: The Link Setup Wizard Step 1

Overview: The Link Setup Wizard Step 1 as shown in Figure 8-28 allows Link name to be entered and edited as required. See Section 3 for more information about setting up links.

Access: **SETUP** **VEHICLE SETUP** **LINK SETUP** **NEW** **or** **EDIT**

Name	Function
BACK Button	The BACK button is not available in the Link Wizard Step 1.
CANCEL Button	The CANCEL button will ignore any changes or selected actions, close the Wizard and return to the Link Setup window.
NEXT Button	The NEXT button will select Step 2 of the Link Wizard.

- **Link Setup Wizard Step 2**

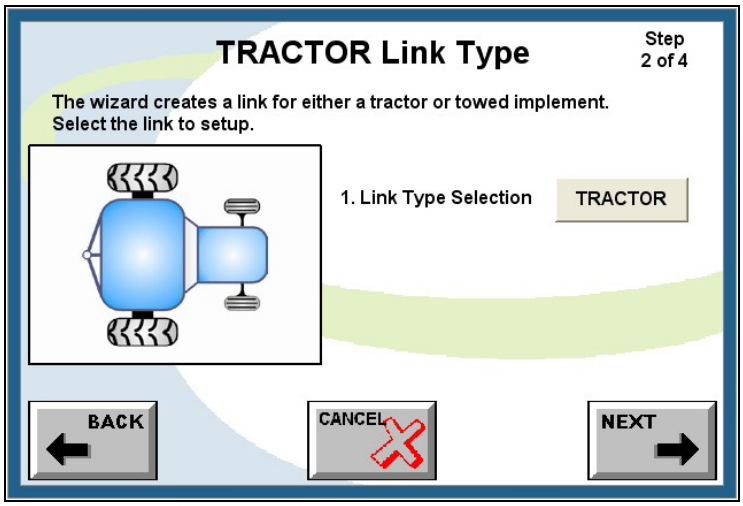


Figure 8-29: The Link Setup Wizard Step 2

Overview: The Link Setup Wizard Step 2 as shown in Figure 8-29 allows Link type to be selected. See Section 3 for more information about setting up links.

Access: **SETUP** **VEHICLE SETUP** **LINK SETUP** **NEW** or **EDIT** **NEXT**

Name	Function
LINK TYPE SELECTION Button	The LINK TYPE SELECTION button allows selection of a TRACTOR, ARTICULATED or IMPLEMENT link type. **Note:** In EDIT mode, this setting cannot be changed. If the Link Type needs to be changed, then the link must be deleted and a new link created.
BACK Button	The BACK button will return to Link Wizard Step 1.
CANCEL Button	The CANCEL button will ignore any changes or selected actions, close the Wizard and return to the Link Setup Window.
NEXT Button	The NEXT button will select Step 3 of the Link Wizard.

- **Link Setup Wizard Step 3**

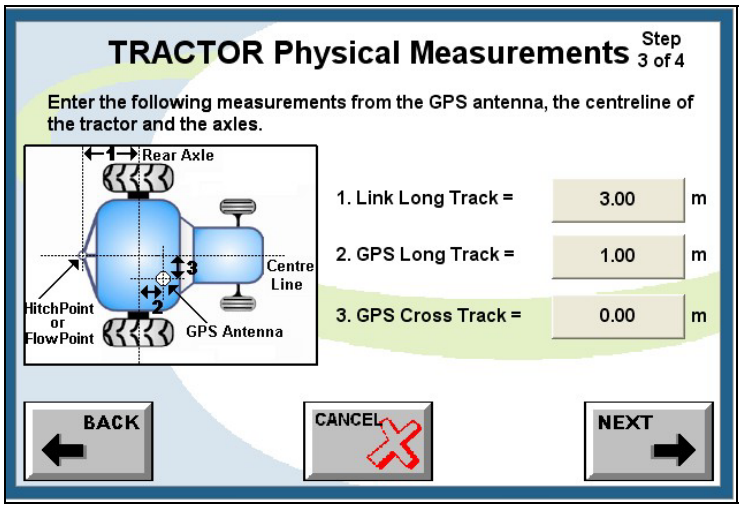


Figure 8-30: The Link Setup Wizard Step 3

Overview: The Link Setup Wizard Step 3 as shown in Figure 8-30 allows Link measurements to be entered. See Section 3 for more information about setting up links.

Access: **SETUP** **VEHICLE SETUP** **LINK SETUP** **NEW** or **EDIT** **NEXT** **NEXT**

Name	Function
LINK LONG TRACK Button	The LINK LONG TRACK button opens the numerical keyboard to enter the value of the Link Long Track.
GPS LONG TRACK Button	The GPS LONG TRACK button opens the numerical keyboard to enter the value of the GPS Long Track.
GPS CROSS TRACK Button	The GPS CROSS TRACK button opens the numerical keyboard to enter the value of the GPS Cross Track.
BACK Button	The BACK button will return to Link Wizard Step 2.
CANCEL Button	The CANCEL button will ignore any changes or selected actions, close the Wizard and return to the Link Setup Window.
NEXT Button	The NEXT button will select Step 4 of the Link Wizard.

- **Link Setup Wizard Step 4**

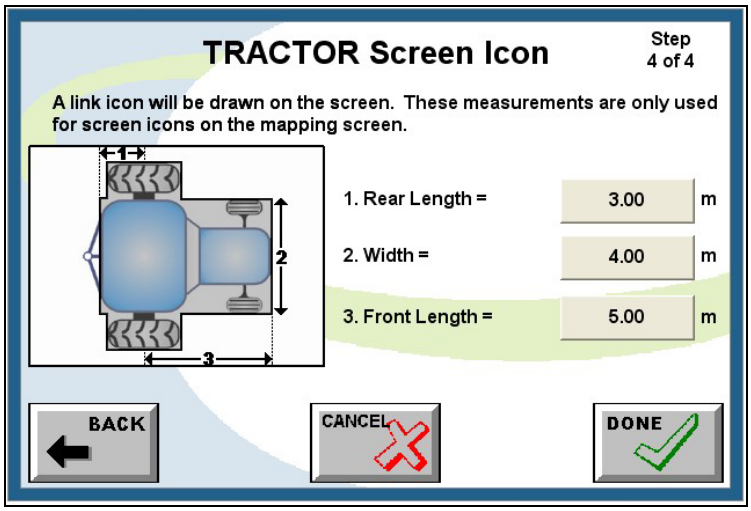


Figure 8-31: The Link Setup Wizard Step 4

Overview: The Link Setup Wizard Step 4 as shown in Figure 8-31 allows measurements to be entered for how the link is displayed on the screen. These measurements do not affect treatment recording or any other operation. See Section 3 for more information about setting up links.

Access: **SETUP** **VEHICLE SETUP** **LINK SETUP** **NEW** or **EDIT** **NEXT** **NEXT** **NEXT**

Name	Function
REAR LENGTH Button	The REAR LENGTH button opens the numerical keyboard to enter the value of the Rear Length.
WIDTH Button	The WIDTH button opens the numerical keyboard to enter the value of the Width.
FRONT LENGTH Button	The FRONT LENGTH button opens the numerical keyboard to enter the value of the Front Length.
BACK Button	The BACK button will return to Link Wizard Step 3.

CANCEL Button	The CANCEL button will ignore any changes or selected actions, close the Wizard and return to the Link Setup Window.
DONE Button	The DONE button will update the selected actions, close the Window and return to the Link Setup Window.

8.3.6.2 Rig Setup

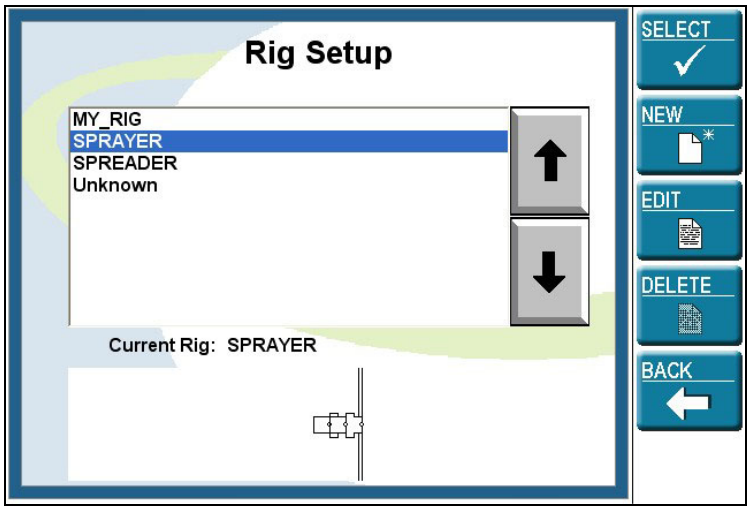


Figure 8-32: The Rig Setup Window

Overview: The Rig Setup window as shown in Figure 8-32 allows the Vehicle details to be entered and edited as required.

Access: **SETUP** **VEHICLE SETUP** **RIG SETUP**

Name	Function
↑ (UP) Button	The UP button moves the selection bar up the list of available rigs.
↓ (DOWN) Button	The DOWN button moves the selection bar down the list of available rigs
NEW Button	The NEW button will select the New Rig window to allow entry of a new rig.
EDIT Button	The EDIT button will select the Edit Rig window so the selected rig maybe edited
DELETE Button	The DELETE button will delete the selected Rig.
BACK Button	The BACK button will close the Window and return to the previous Menu.

- **New or Edit Rig**

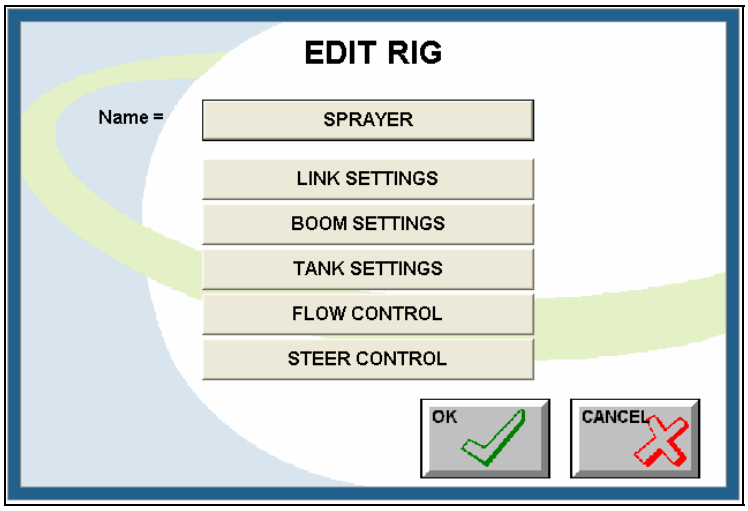


Figure 8-33: The New Rig Window

Overview: The New or Edit Rig window as shown in Figure 8-33 allows the individual parameters of the rig to be configured.

Access: **SETUP** **VEHICLE SETUP** **RIG SETUP** **NEW** **or** **EDIT**

Name	Function
NAME Button	The NAME button selects the alphanumeric keyboard to enter the name of the rig.
LINK SETTINGS Button	The LINK SETTINGS button selects the Link Settings window to allow the rig to be assembled from selected links. See Section 3 for more details about rigs and links.
BOOM SETTINGS Button	The BOOM SETTINGS button selects the Boom Settings Window to enter the number of sections and their respective widths that make up the boom associated with the rig.
FLOW CONTROL Button	The FLOW CONTROL button selects the Flow Control Settings button to select the flow controller that is used on the rig.

Name	Function
STEER CONTROL Button	The STEER CONTROL button selects the Steer Control Settings window to enable selection of the AutoSTEER steering controller.
OK Button	The OK button will update the selected actions, close the Window and return to the Rig Setup list window.
CANCEL Button	The CANCEL button will ignore any selected actions, close the Window and return to the Rig Setup list window.

- **Link Settings**

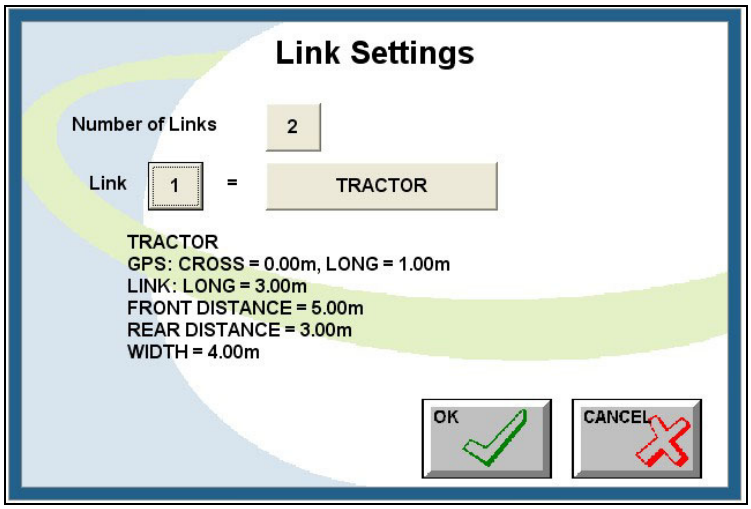


Figure 8-34: The Link Settings Window

Access: **SETUP** **VEHICLE SETUP** **RIG SETUP** **NEW** **or** **EDIT** **LINK SETTINGS**

Name	Function
NUMBER OF LINKS Button	The NUMBER OF LINKS button displays the Number of Links window where the number of links is changed.
LINK (number) Button	The LINK (number) button toggles between each link, displaying the name of the selected link on the adjacent button.
LINK (name) Button	The LINK (name) button displays the Link list window. The appropriate vehicle or implement for the selected link position can be selected from the list.
OK Button	The OK button will update the selected actions, close the window and return to the Edit Rig window.
CANCEL Button	The CANCEL button will ignore any selected actions, close the window and return to the Edit Rig window.

- **Boom Settings**

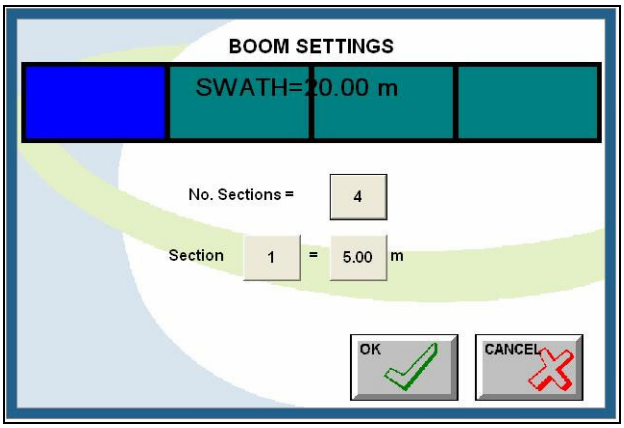


Figure 8-35: The Boom Settings window

Overview: The Boom Settings window, shown in Figure 8-35 allows the number of boom sections and the width of each boom section to be changed.

Access: **SETUP** **VEHICLE SETUP** **RIG SETUP** **NEW** **or** **EDIT** **BOOM SETTINGS**

Name	Function
NO. SECTIONS Button	The NO. SECTIONS button displays the Number of Boom Sections window from which the number of boom sections is changed.
SECTION Button	The SECTION button toggle between each boom section, displaying the width of the section on the adjacent button
SECTION WIDTH Button	The SECTION WIDTH button displays the numeric keyboard window. The width of the currently selected section can be changed.
OK Button	The OK button will update the selected actions, close the window and return to the Edit Rig window.
CANCEL Button	The CANCEL button will ignore any selected actions, close the window and return to the Edit Rig window.

- **Number of Boom Sections**

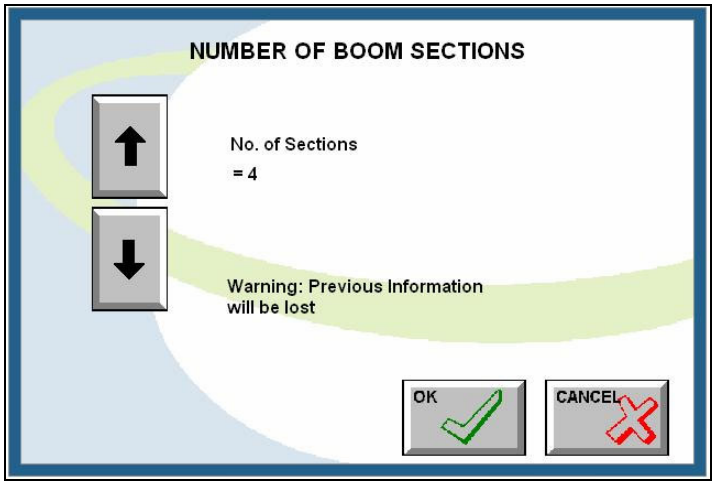


Figure 8-36: The Number of Boom Sections Window

Overview: The Number of Boom Sections window as shown in Figure 8-36 allows the number of sections in the boom to be configured.

Access: **SETUP** **VEHICLE SETUP** **RIG SETUP** **NEW** **or** **EDIT** **BOOM SETTINGS** **NO. SECTIONS**

Name	Function
↑ (UP) Button	The UP button increases the number of boom sections by one until a maximum of 32 sections is reached.
↓ (DOWN) Button	The DOWN button decreases the number of boom sections by one until a minimum of one section is reached.
OK Button	The OK button will update the selected actions, close the window and return to the Boom Settings window.
CANCEL Button	The CANCEL button will ignore any selected actions, close the window and return to the Boom Settings window.

• Flow Controller Settings

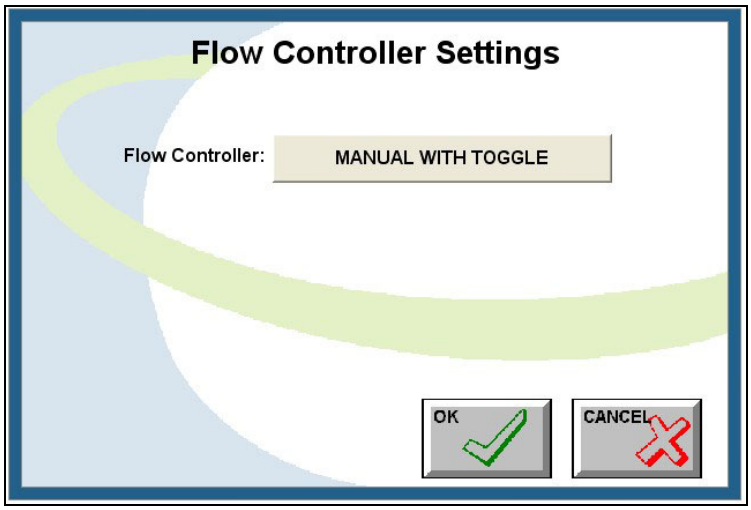


Figure 8-37: The Flow Controller Settings window

Overview: The Flow Controller Settings window, shown in Figure 8-37 allows the type of flow controller to be selected.

Access: **SETUP** **VEHICLE SETUP** **RIG SETUP** **NEW** **or** **EDIT** **FLOW CONTROLLER**

Name	Function
FLOW CONTROLLER Button	The FLOW CONTROLLER button displays a list of flow controllers compatible with GuideTRAX V3. The required flow controller can be selected from the available list of controllers. Refer to Table 8-1 to see what information is reported by compatible flow controllers.
OK Button	The OK button will update the selected actions, close the window and return to the Edit Rig window.
CANCEL Button	The CANCEL button will ignore any selected actions, close the window and return to the Edit Rig window.

Table 8-1: GuideTRAX V3 - Flow Controller Compatibility Chart

Compatible Flow Controllers	Send Master	Receive Master	AutoSPRAY	Read Sections	Read Boom Configurations	Receive Actual Rate
Apollo 8000	✘	✓	✘	✘	✘	✓
BA7000	✘	✓	✓	✓	✘	✓
Farmscan 2400	✓	✘	✘	✓	✓	✓
Farmscan 24v1	✓	✘	✘	✓	✓	✓
Hardi 5500 / 6500	✘	✓1	✓	✓	✓	✓
KEE Eagle	✘	✓	✓	✓	✘	✓
MSBI	✘	✓	✘	✓	✘	✘
Raven Series	✘	✓1	✘	✓	✓	✓
RINEX Toggle Box	✘	✓	✘	✘	✘	✘
John Deere SprayStar (available on CANbus ONLY)	✘	✓	✘	✘	✘	✘

Interface cables to suit each particular controller may be purchased from RINEX.

✓ *Feature Available*

✓1 *Only when AutoSPRAY is OFF*

✘ *Feature Un-available*

- **Steer Controller Settings**

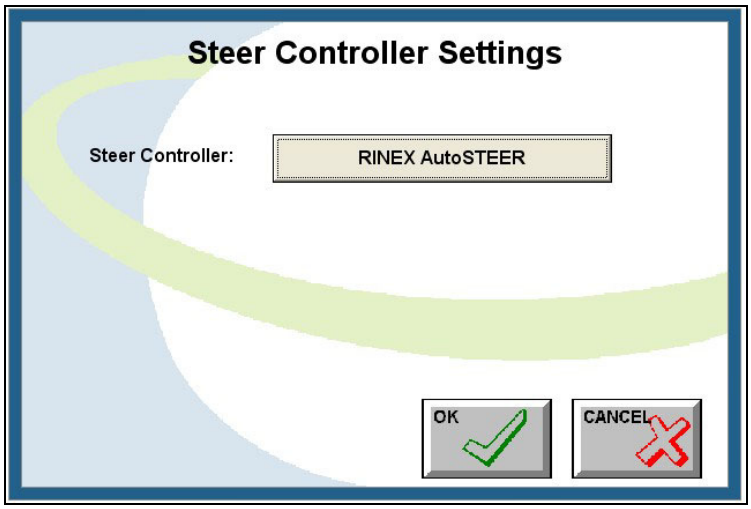


Figure 8-38: Steer Controller Settings Window

Overview: The Steer Controller Settings window, shown in Figure 8-38 allows the type of steer controller to be selected.

Access: **SETUP** **VEHICLE SETUP** **RIG SETUP** **NEW** or **EDIT** **STEER CONTROLLER**

Name	Function
STEER CONTROLLER Button	The STEER CONTROLLER button displays a list of steer controllers compatible with GuideTRAX V3 for AutoSTEER. The required steer controller can be selected from the available list of controllers.
OK Button	The OK button will update the selected actions, close the window and return to the Edit Rig window.
CANCEL Button	The CANCEL button will ignore any selected actions, close the window and return to the Edit Rig window.

8.3.6.3 Switch Setup

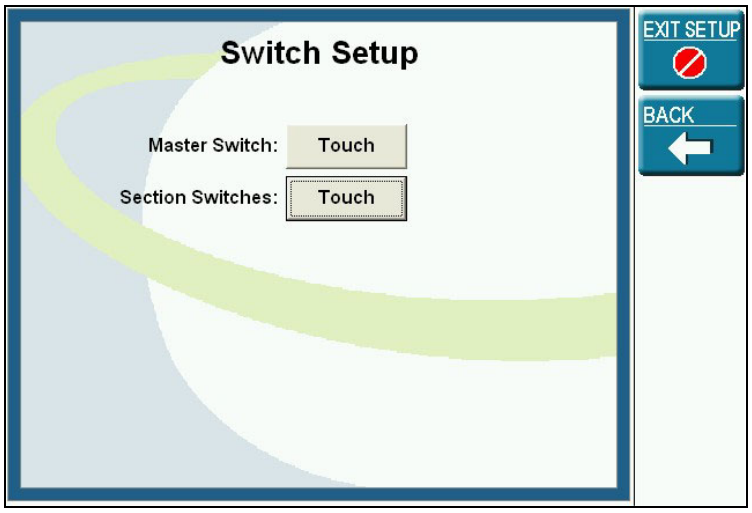


Figure 8-39: The Switch Setup Window

Overview: The Switch Setup window, see Figure 8-39 allows the system to be configured with different switches for starting and stopping of recorded treatment data.

Access: **SETUP** **VEHICLE SETUP** **SWITCH SETUP**

Name	Function
MASTER SWITCH Button	The MASTER SWITCH button selects the switch device that is used for starting and stopping of recorded treatments. See section 2.11 for more detail.
SECTION SWITCHES Button	The SECTION SWITCHES button selects the device that is used for starting and stopping of individual boom sections' treatments.
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.7 AutoSPRAY

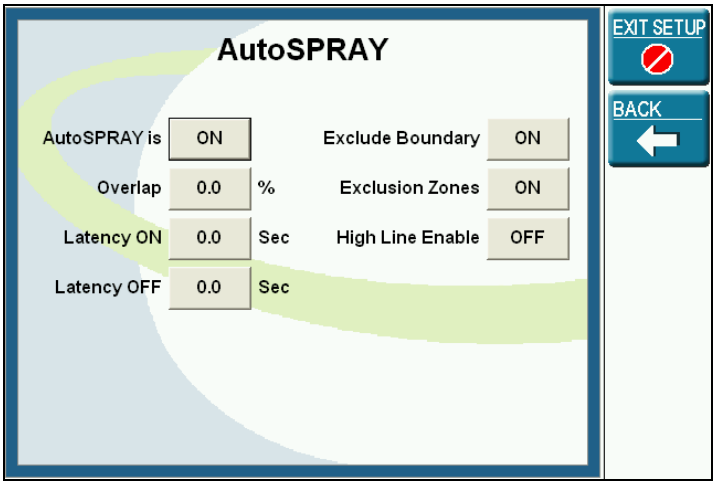


Figure 8-40: The AutoSPRAY Window

Overview: The AutoSPRAY window, see Figure 8-40 allows configuration of AutoSPRAY settings.

Access: **SETUP** **AUTOSPRAY**

Name	Function
AutoSPRAY Button	The AutoSPRAY button turns AutoSPRAY ON or OFF. When AutoSPRAY is ON, AutoSPRAY controls the spray state of each boom section.
OVERLAP Button	The OVERLAP button selects a keyboard to enter a value for spray overlap. AutoSPRAY Overlap is the area (expressed as a percentage) which has been missed, that the system will tolerate. See Section 9.2.2.
LATENCY ON Button	The LATENCY ON button selects a keyboard to enter a value for Latency ON. The Latency ON value is the time it takes for product to start emerging from the spray nozzles once AutoSPRAY has turned spraying on. See Section 9.2.3.

LATENCY OFF Button	The LATENCY OFF button selects a keyboard to enter a value for Latency OFF. The Latency OFF value is the time it takes for product to stop emerging from the spray nozzles once AutoSPRAY has turned spraying off. See Section 9.2.3.
EXCLUDE BOUNDARY Button	The EXCLUDE BOUNDARY button toggles between ON and OFF. When ON, AutoSPRAY will turn off when crossing a field boundary.
EXCLUSION ZONE Button	The EXCLUSION ZONE button toggles between ON and OFF. When ON, AutoSPRAY will turn off when it crosses into a exclusion zone defined on the farm map.
HIGH LINE ENABLE Button	The HIGH LINE ENABLE button toggles between ON and OFF. It switches section 8 permanently on and should only be set ON if specifically instructed to do so in the relevant AutoSPRAY Installation Manual.
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.8 Transfer Files

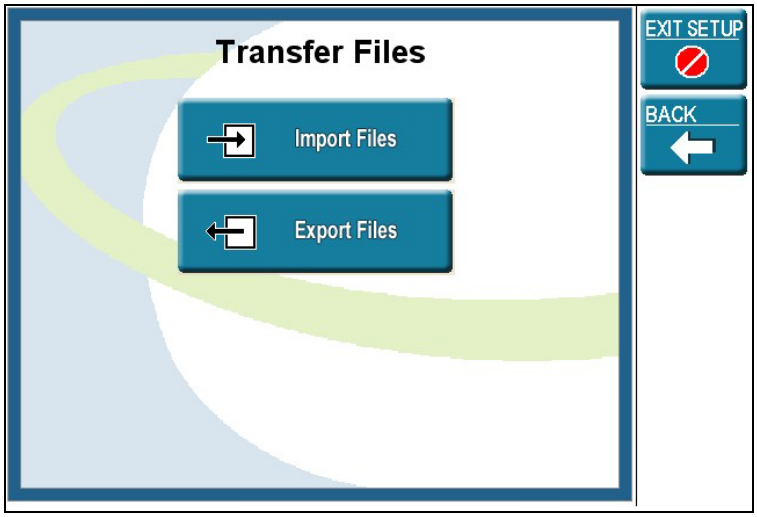


Figure 8-41: The Transfer Files Window

Overview: The Transfer Files window, see Figure 8-41 allows data to be imported and exported.

Access: **SETUP** **TRANSFER FILES**

Name	Function
IMPORT FILES Button	The IMPORT FILES button will import all plans, farm maps, etc from the USB storage device which was exported from the office software.
EXPORT FILES Button	The EXPORT FILES button will copy all Archived treatment data on the Saturn H system to the USB storage device.
EXIT SETUP Button	The EXIT SETUP will close the Window and return to the Main menu.
BACK Button	The BACK button will close the Window and return to the previous Menu.

8.3.9 Guide Options

Figure 8-42: The Guide Options Window

Overview: The Guide Options window, see Figure 8-42 allows selection and editing of guidance options.

Access: **SETUP** **MORE** **GUIDE OPTIONS**

Name	Function
GUIDE OVERLAP Button	The GUIDE OVERLAP button selects a keyboard to enter a value for guide overlap. The guide overlap value results in an overlap in treatment. See Section 5.4.1.
GUIDE OFFSET Button	The GUIDE OFFSET button selects a keyboard to enter a value for guide offset. The guide offset value shifts the parallel guidelines (AB points) for the whole farm. See Section 5.4.2.

Name	Function
LOCK DIRECTION Button	The LOCK DIRECTION button selects the search pattern for Lock guidance, based on the previous treatment swath. A previous treatment swath must be within one swath width of the vehicle for a guideline to be generated. Right First – searches for a previous treatment swath on the Right first. If no previous treatment swath is found, it searches on the left. Left First – searches for a previous treatment swath on the Left first. If no previous treatment swath is found, it searches on the right. Right Only – searches **only** to the right for a previous treatment swath. Left Only – searches **only** to the left for a previous treatment swath.
CONTOUR TYPE	The CONTOUR TYPE button toggles between Lock and RePLAY modes of guidance. In RePLAY mode the REPLAY button will be displayed in the Guide Menu, and will enable a guideline to be replayed from a previous treatment. See Section 5.2. In Lock mode the LOCK button will be displayed in the Guide Menu to enable Lock guidance. See Section 5.1.2 and 5.1.3.
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.10 Lightbar Setup

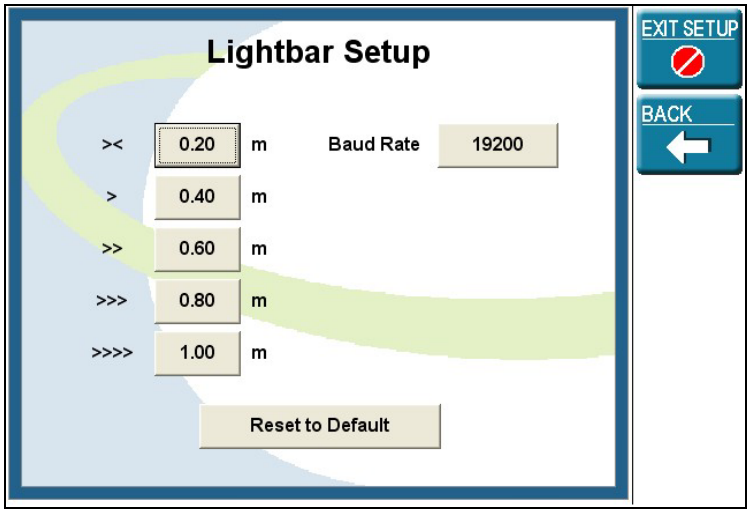


Figure 8-43: The Lightbar Setup Window

Overview: The Lightbar Setup window, see Figure 8-43 allows editing of lightbar guidance/distance limits and baud rate (communication speed). See Section 6.3.4 for more information about how to set the lightbar limits.

Access: **SETUP** **MORE** **LIGHTBAR SETUP**

Name	Function
>< Button	The >< button selects the keyboard for the value (between 0 to 100 metres) to be entered. The value must be greater than 0m and less than the > value.
> Button	The > button selects the keyboard for the value to be entered. The value must be greater than the>< value and less than 100m.
>> Button	The >> button selects the keyboard for the value to be entered. The value must be greater than the> value and less than 100m.
>>> Button	The >>> button selects the keyboard for the value to be entered. The value must be greater than the>> value and less than 100m.

>>>> Button	The >>> button selects the keyboard for the value to be entered. The value must be greater than the>>> value and less than 100m.
BAUD RATE Button	The BAUD RATE button allows lightbars which communicate at different baud rates to be used with the Saturn H series.
RESET TO DEFAULT Button	Touching the RESET TO DEFAULT button returns all Lightbar settings to factory defaults.
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.11 Virtual Road Setup

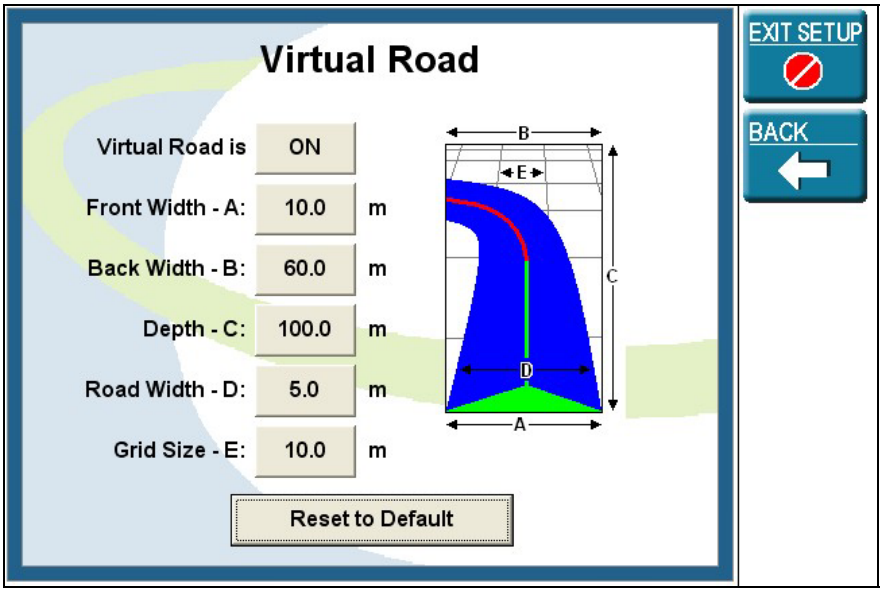


Figure 8-44: The Virtual Road Window

Overview: The Virtual Road window, see Figure 8-44 allows editing of Virtual Road dimensions. See Section 6.3.3 for more information about customising the Virtual Road.

Access: **SETUP** **MORE** **VIRTUAL ROAD SETUP**

Name	Function
VIRTUAL ROAD Button	The VIRTUAL ROAD button turns the Virtual Road window ON or OFF. When ON, the Virtual Road window appears to the left of the Map screen. When OFF, the Virtual Road window disappears from the Main screen, enlarging the Map screen.
FRONT WIDTH Button	The FRONT WIDTH button opens the numerical keyboard to enter the value of the front width of the Virtual Road.
BACK WIDTH Button	The BACK WIDTH button opens the numerical keyboard to enter the value of the back width of the Virtual Road.

DEPTH Button	The DEPTH button opens the numerical keyboard to enter the value of the depth of the Virtual Road.
ROAD WIDTH Button	The ROAD WIDTH button opens the numerical keyboard to enter the value of the road width of the Virtual Road.
GRID SIZE Button	The GRID SIZE button opens the numerical keyboard to enter the value of the grid size displayed in the Virtual Road window
RESET TO DEFAULT Button	Touching the RESET TO DEFAULT button returns all Virtual Road settings to factory defaults.
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.12 GPS Setup

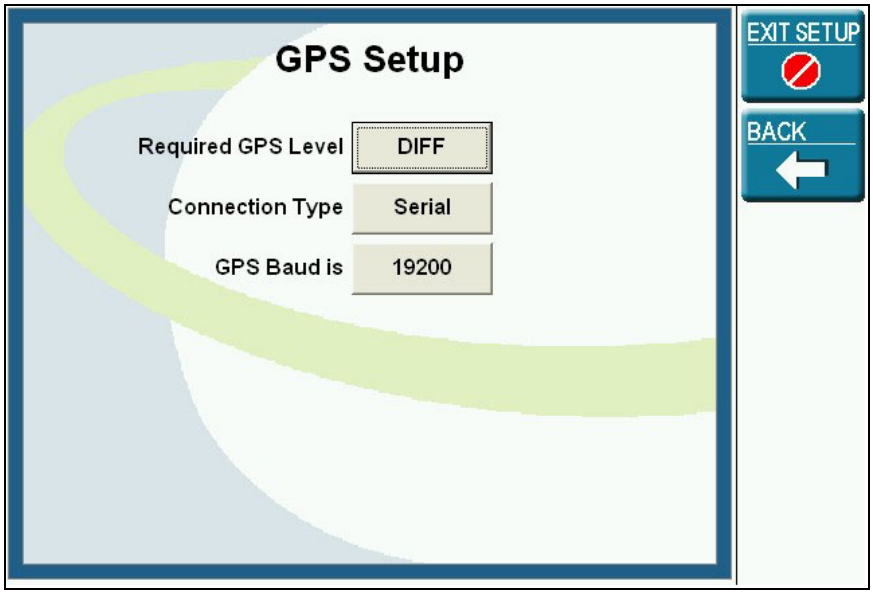


Figure 8-45: The GPS Setup Window

Overview: The GPS Setup window, see Figure 8-45 allows selection of GPS accuracy level, interface/connection type and Baud rate (communication speed). See Section 6.2 for more information about GPS configurations.

Access: **SETUP** **MORE** **GPS SETUP**

Name	Function
REQUIRED GPS LEVEL Button	The REQUIRED GPS LEVEL button allows selection of the level of accuracy required. DIFF – differentially corrected GPS data. DIFF is the recommended level. GPS – uncorrected GPS data. Less accurate than DIFF.
CONNECTION TYPE Button	The CONNECTION TYPE button toggles between Serial and CANbus depending on which type of interface connection the GPS receiver has. CANbus is an optional extra on the Saturn H system which must be purchased. Where possible GuideTRAX V3 will automatically detect the Connection Type.

Name	Function
GPS BAUD Button	The GPS BAUD button allows the serial baud rate setting in GuideTRAX V3 to be selected to match that of the GPS receiver. Possible values are 4800, 9600 or 19200. As the baud rate is only applicable to serial connections this button will not be available if CANbus connection type is selected.
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.13 Remote Buttons

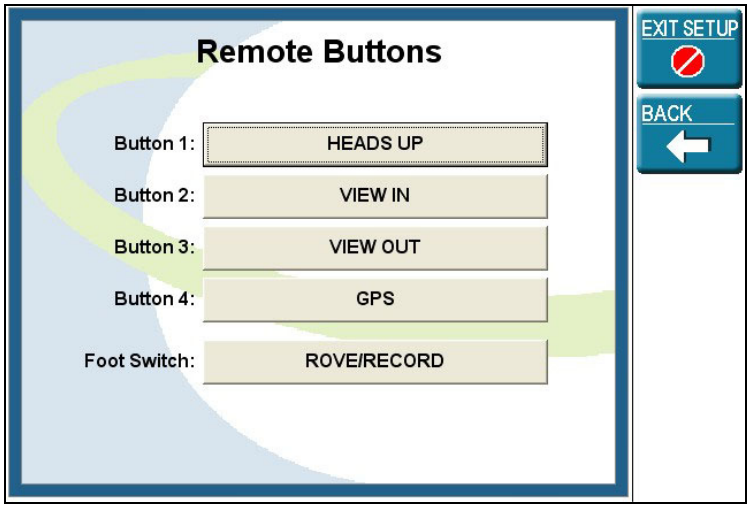


Figure 8-46: The Remote Buttons Window

Overview: The Remote Buttons window, see Figure 8-46 allows the RINEX Button Box and Footswitch to be configured. See Sections 6.7 and 6.8 for a complete list of each function and for more information about configuring Remote Buttons.

Access: **SETUP** **MORE** **REMOTE BUTTONS**

Name	Function
BUTTON 1 Button	BUTTON 1 selects the Remote Buttons Window from which a function for the Button may be selected. If no Button box is attached the setting will have no effect.
BUTTON 2 Button	BUTTON 2 selects the Remote Buttons Window from which a function for the Button may be selected. If no Button box is attached the setting will have no effect.
BUTTON 3 Button	BUTTON 3 selects the Remote Buttons Window from which a function for the Button may be selected. If no Button box is attached the setting will have no effect.
BUTTON 4 Button	BUTTON 4 selects the Remote Buttons Window from which a function for the Button may be selected. If no Button box is attached the setting will have no effect.

FOOT SWITCH Button	The FOOT SWITCH button selects the Remote Buttons Window from which a function for the Foot Switch may be selected. If no Foot Switch is attached the setting will have no effect.
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.14 Sound Setup

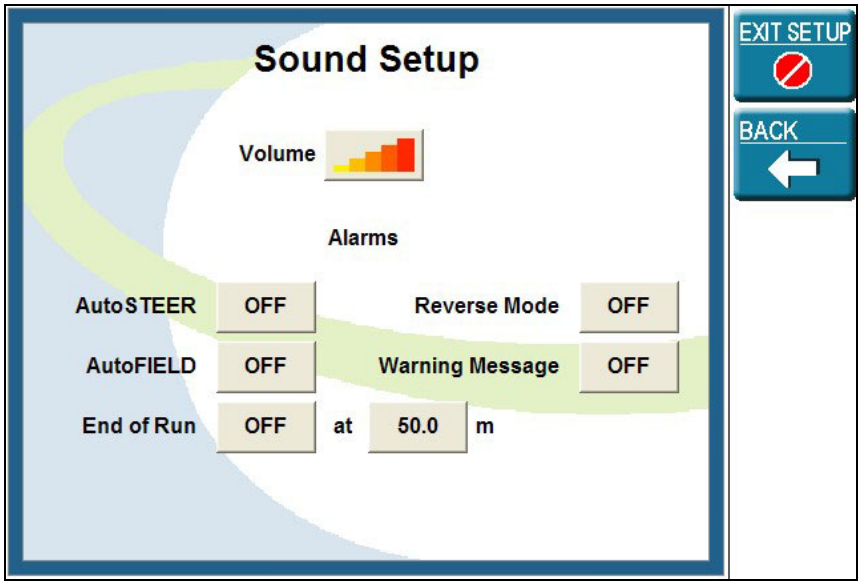
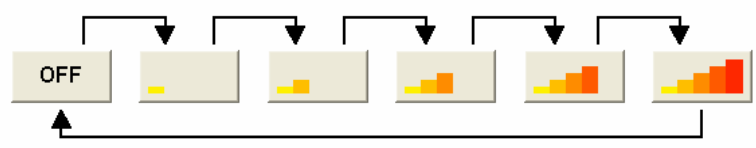


Figure 8-47: The Sound Setup Window

Overview: The Sound Setup window, see Figure 8-47 allows sound to be turned on or off and volume level to be adjusted for compatible speakers or headphones connected to the Audio jack on the Saturn H interface unit.

Access: **SETUP** **MORE** **SOUND SETUP**

Name	Function
VOLUME Button	The VOLUME button toggles through six levels of sound, from OFF to HIGH. Each time the button is touched, the sound level will be increased by one notch and the button display will change accordingly. When the button displays maximum sound level as shown in Figure 8-47, the next time it is touched the volume will drop back to OFF. 

Name	Function
AUTOSTEER Button	The AUTOSTEER button toggles between ON or OFF. When it is set to ON a specific sound indicates that AutoSTEER has been engaged or disengaged.
AUTOFIELD Button	The AUTOFIELD button toggles between ON or OFF. When it is set to ON a specific sound indicates that AutoFIELD has detected a change of fields.
END OF RUN Button	The END OF RUN button toggles between ON or OFF. When the button is set to ON a specific sound indicates that the vehicle is approaching the end of the run. The distance from the end of the run at which the alarm sounds can be set on the END OF RUN DISTANCE button.
END OF RUN DISTANCE Button	The END OF RUN DISTANCE button selects a keyboard to allow the distance from the end of the run to be entered. This value is used to set the distance from the end of run at which the alarm sounds.
REVERSE MODE Button	The REVERSE MODE button toggles between ON or OFF. When the button is set to ON a specific sound indicates that the AutoSPRAY Reverse Lock is active.
WARNING MESSAGES Button	The WARNING MESSAGES button toggles between ON or OFF. When the button is set to ON a specific sound is heard whenever there is a warning message displayed on the Status Bar.
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.15 Memory Setup

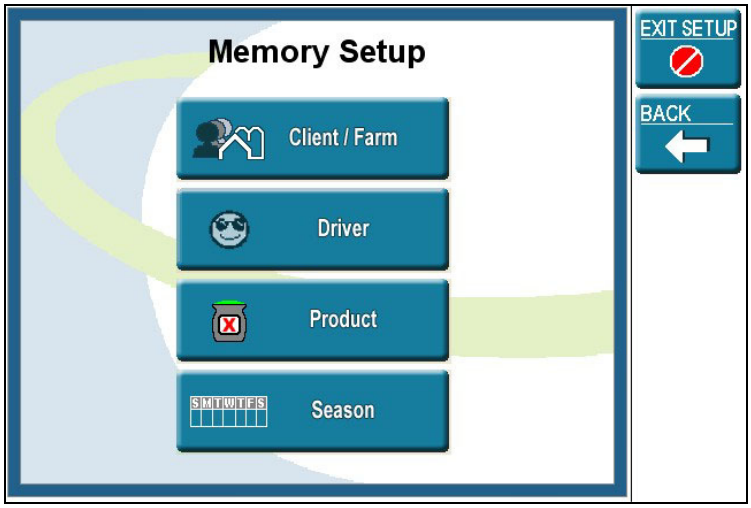


Figure 8-48: The Memory Setup Window

Overview: The Memory Setup Window, see Figure 8-48 allows Client, Farm Driver, Product and Season information to be setup.

Access: **SETUP** **MORE** **MEMORY SETUP**

Name	Function
CLIENT/FARM Button	The CLIENT/FARM button selects the Client/Farm Setup window to allow client and farm details to be setup.
DRIVER Button	The DRIVER button selects the Driver Setup window to allow driver details to be setup.
PRODUCT Button	The PRODUCT button selects the Product Setup window to allow product details to be setup.
SEASON Button	The SEASON button selects the Season Setup window to allow addition and deletion of cropping seasons.
EXIT SETUP Button	The EXIT SETUP button will close the Window and return to the Main menu.
BACK Button	The BACK button will close the Window and return to the previous Menu.

8.3.15.1 Client/Farm Setup

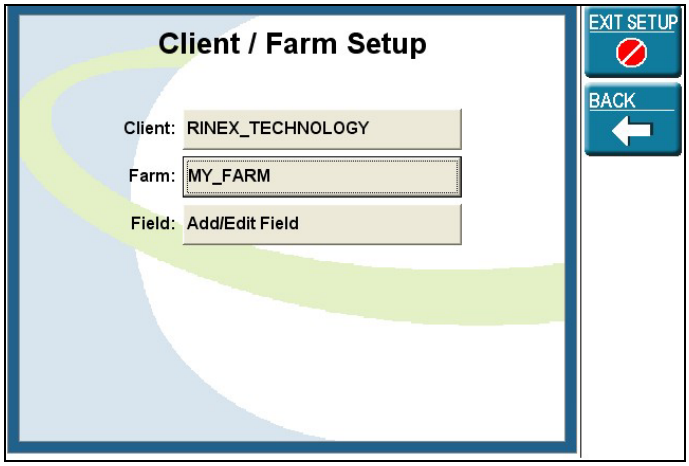


Figure 8-49: The Client/Farm Setup Window

Overview: The Client/Farm Setup window, see Figure 8-49 allows client and farm information to be added.

Access: **SETUP** **MORE** **MEMORY SETUP** **CLIENT/FARM**

Name	Function
CLIENT Button	The CLIENT button selects the Client Setup window to allow adding and editing client details.
FARM Button	The FARM button selects the Farm Setup window to allow adding and editing farm details.
FIELD Button	The FIELD button selects the Field Setup window to allow adding and editing field details.
EXIT SETUP Button	The EXIT SETUP button will close the Window and return to the Main menu.
BACK Button	The BACK button will close the Window and return to the previous Menu.

- **Client Setup**

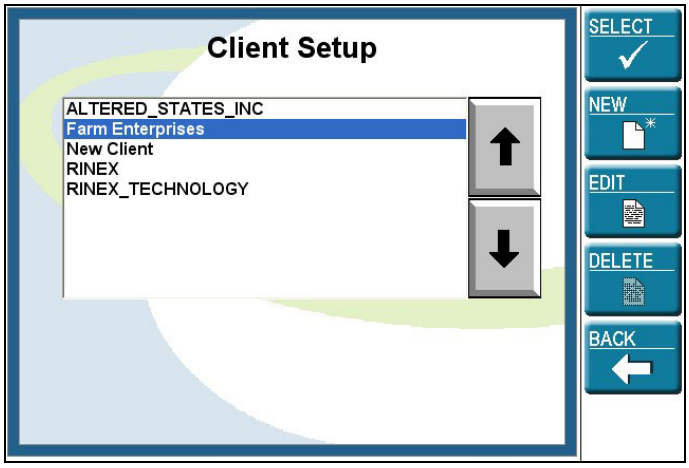


Figure 8-50: The Client Setup Window

Overview: The Client Setup window, see Figure 8-50 allows client information to be added.

Access: **SETUP** **MORE** **MEMORY SETUP** **CLIENT/FARM** **CLIENT**

Name	Function
↑ (UP) Button	The UP button highlights the previous client.
↓ (DOWN) Button	The DOWN button highlights the next client.
SELECT Button	The SELECT button selects the highlighted client, closes the window and returns to the Client/Farm Setup window.
NEW Button	The NEW button displays an on-screen keyboard to allow the new client name to be entered.
DELETE Button	The DELETE button deletes the selected client and all the attached data such as farm and field names.
BACK Button	The BACK button will close the window and return to the previous Menu.

- **Farm Setup**

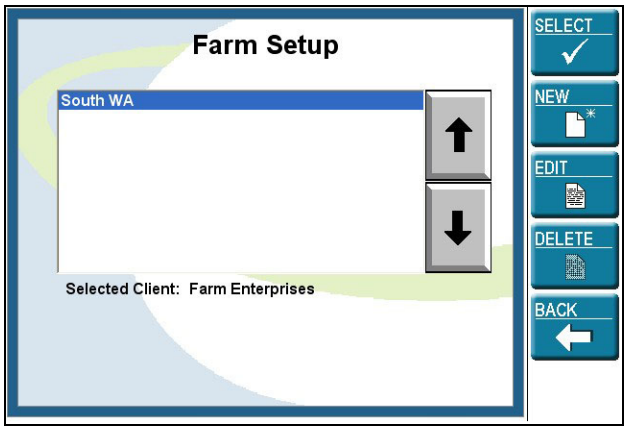


Figure 8-51: The Farm Setup Window

Overview: The Farm Setup window, see Figure 8-51 allows farm information to be added.

Access: **SETUP** **MORE** **MEMORY SETUP** **CLIENT/FARM** **FARM**

Name	Function
(UP) Button	The UP button highlights the previous farm.
(DOWN) Button	The DOWN button highlights the next farm.
SELECT Button	The SELECT button selects the highlighted farm, closes the window and returns to the Client/Farm Setup window.
NEW Button	The NEW button displays an on-screen keyboard to allow the new farm name to be entered.
DELETE Button	The DELETE button displays a message warning that all attached fields will be deleted and seeking confirmation to delete the selected farm. When OK is pressed, the selected client will be deleted.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

- **Field Setup**

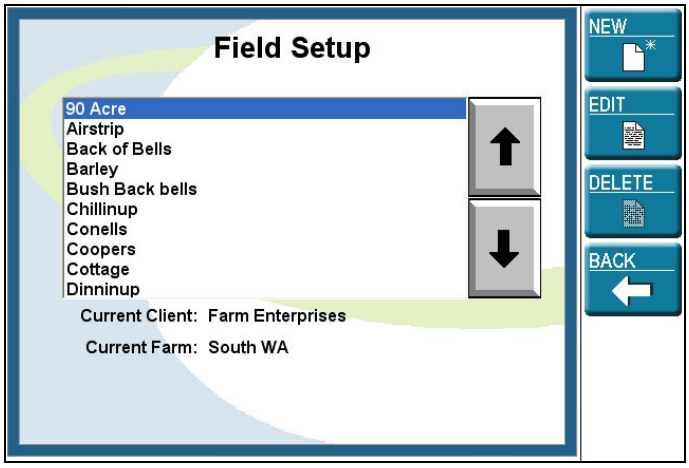


Figure 8-52: The Field Setup Window

Overview: The Field Setup window, see Figure 8-52 allows field information to be added and changed. Although field names can be added here, field names will be imported with farm maps (see Section 6.5) or created when archiving completed treatments – see Section 4.4.

Access: **SETUP** **MORE** **MEMORY SETUP** **CLIENT/FARM** **FIELD**

Name	Function
(UP) Button	The UP button highlights the previous field.
(DOWN) Button	The DOWN button highlights the next field
NEW Button	The NEW button displays an on-screen keyboard to allow the new field name to be entered.
EDIT Button	The EDIT button displays the current field name with an on-screen keyboard to allow the field name to be changed.
DELETE Button	The DELETE button displays a warning message seeking confirmation to delete the selected field. When OK is pressed, the selected field will be deleted.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.15.2 Driver Setup

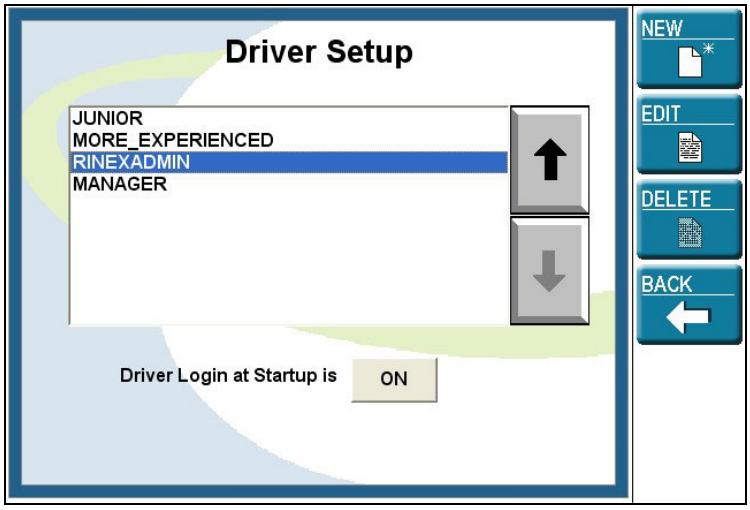


Figure 8-53: The Driver Setup Window

Overview: The Driver Setup window, see Figure 8-53 allows driver details to be created and changed.

Access: **SETUP** **MORE** **MEMORY SETUP** **DRIVER**

Name	Function
↑ (UP) Button	The UP button highlights the previous field.
↓ (DOWN) Button	The DOWN button highlights the next field
DRIVER LOGIN AT STARTUP Button	The DRIVER LOGIN AT STARTUP button toggles between the ON and OFF states. If the button is ON, then when the system is starting up it will wait until the driver has logged on before starting GuideTRAX V3. When the button is OFF, the system will automatically logon as the last driver logged in before the system was turned off.
NEW Button	The NEW button displays the Edit Driver window to allow the drivers name, security level and password to be setup.

Name	Function
EDIT Button	The EDIT button displays the Edit Driver window to allow the driver's name, security level and password to be changed.
DELETE Button	The DELETE button displays a message seeking confirmation to delete the selected driver. When OK is pressed, the selected driver will be deleted.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

- **Edit Driver**

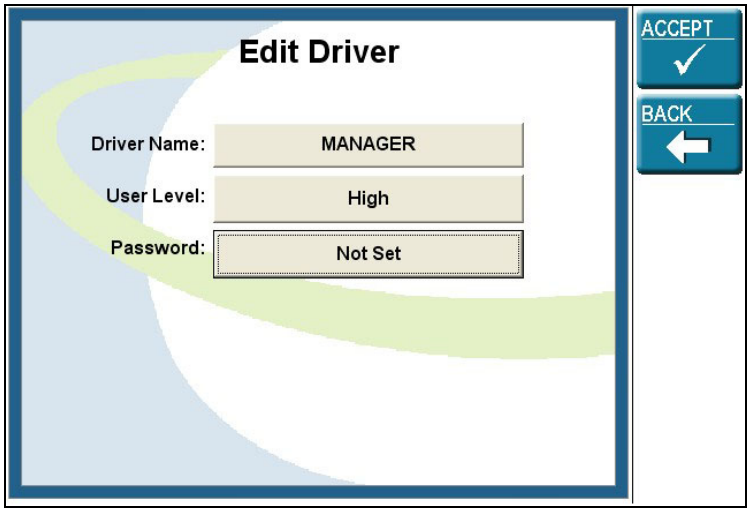


Figure 8-54: The Edit Driver Window

Overview: The Edit Driver window, see Figure 8-54 allows the driver's details to be changed.

Access: **SETUP** **MORE** **MEMORY SETUP** **DRIVER** **EDIT**

Name	Function
DRIVER NAME Button	The DRIVER NAME button displays an on-screen keyboard to allow the driver's name to be changed.
USER LEVEL Button	The USER LEVEL button toggles through three levels: • **Low Level:** The driver is restricted from changing most settings while still having enough access to record information and do the job. This setting is intended for general workers with limited experience with the system. • **Medium Level:** The driver can change most settings on the system, but cannot delete any thing or setup drivers with a High User Level. This setting is intended for a people in supervisor positions. • **High Level:** The driver has access to all functions. This setting is typically intended for Farm Owners or Managers.

PASSWORD Button	The PASSWORD button displays an on-screen keyboard to allow the new password to be entered. It is not necessary to set a password, however it is recommended if security and accurate tracking of drivers is desired.
ACCEPT Button	The ACCEPT button saves the changes, closes the window and returns to the Driver Setup window
BACK Button	The BACK button will ignore the selected actions, close the Window and return to the Driver Setup window.

8.3.15.3 Product Setup

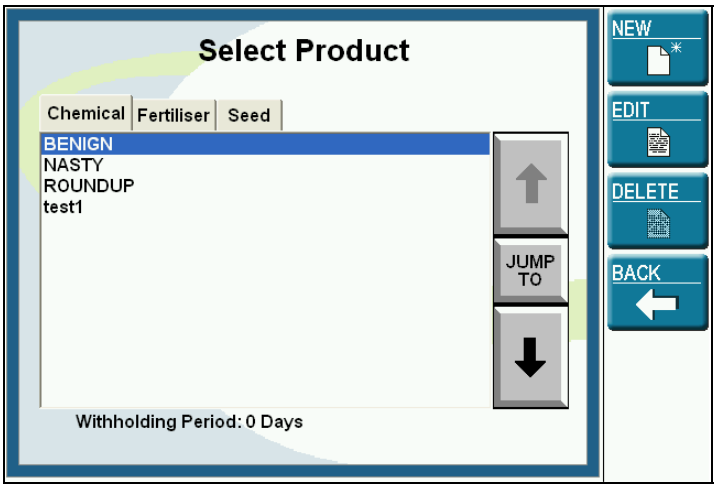


Figure 8-55: The Product Setup Window

Overview: The Product Setup window, see Figure 8-55 allows products to be added or deleted and details to be changed.

Access: **SETUP** **MORE** **MEMORY SETUP** **PRODUCT**

Name	Function
↑ (UP) Button	The UP button selects the previous product.
JUMP TO Button	The JUMP TO button displays a keyboard to allow the first few characters of a product name to be entered. When OK is pressed the Product Setup window will then jump to the nearest product name starting with the entered characters.
↓ (DOWN) Button	The DOWN button selects the next product.
WITHHOLDING PERIOD Field	The WITHHOLDING PERIOD field at the bottom of the screen displays the withholding period of the selected product.
NEW Button	The NEW button selects the appropriate New product window (Chemical, Fertiliser or Seed) to allow entry of the new product details.
EDIT Button	The EDIT button selects the appropriate Edit product window (Chemical, Fertiliser or Seed) to allow the selected product details to be changed.

DELETE Button	The DELETE button displays a message seeking confirmation to delete the selected product. When OK is pressed, the selected season will be deleted.
BACK Button	The BACK button will close the window and return to the previous Menu.

- **New or Edit Chemical**

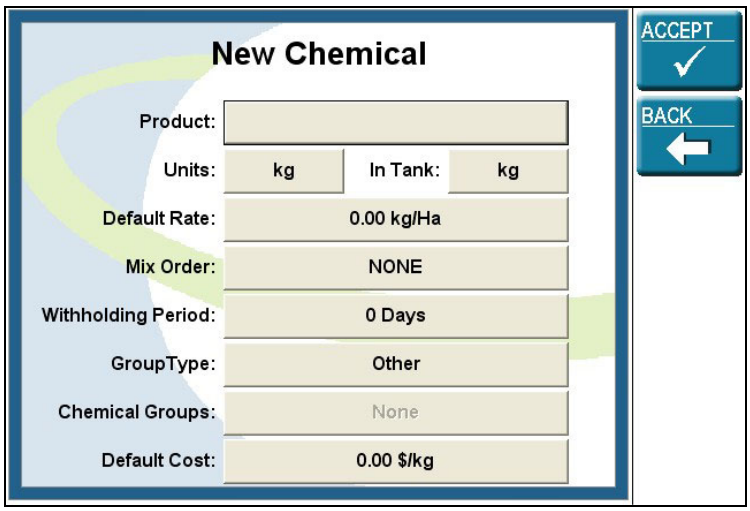


Figure 8-56: The New Chemical Window

Overview: The New Chemical window, see Figure 8-56 allow new chemicals to be added. The Edit Chemical Window is identical and allows all chemical details to be changed.

Access: **SETUP MORE MEMORY SETUP PRODUCT CHEMICAL NEW**
or RECORDS TANK STORE ADD SELECT PRODUCT

Name	Function
PRODUCT Button	The PRODUCT button displays an on-screen keyboard to allow entry of the new chemical name.
UNITS Button	The UNITS button displays the Select Units window. The units in which the chemical was purchased can then be selected from a drop down list.
IN TANK Button	The IN TANK button displays the Select Units In Tank window. The units in which the chemical is added to the tank can then be selected from a drop down list.
DEFAULT RATE Button	The DEFAULT RATE button displays an on-screen numeric keypad on which the usual application rate for the product can be entered.

MIX ORDER Button	The MIX ORDER button displays the Select Mix Order window. The mix order can then be selected from a drop down list.
WITHHOLDING PERIOD Button	The WITHHOLDING PERIOD button displays an on-screen keyboard on which the withholding period (in days) can be entered.
GROUP TYPE Button	The GROUP TYPE button toggles through four choices when pressed: • Other • Herbicide • Insecticide • Fungicide
CHEMICAL GROUPS Button	The CHEMICAL GROUPS button displays an on-screen keyboard on which the chemical group can be entered. The Chemical groups button will not be active if the Group Type has been set to Other.
DEFAULT COST Button	The DEFAULT COST button displays an on-screen numeric keypad on which the usual unit cost of the chemical can be entered.
ACCEPT Button	The ACCEPT button saves the changes, closes the window and returns to the Product Setup window.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

- **New or Edit Fertiliser**

Figure 8-57: The New Fertiliser Window

Overview: The New Fertiliser window, see Figure 8-57 allows new fertilisers to be added. The Edit Fertiliser Window is identical and allows all fertiliser details to be changed.

Access: **SETUP** **MORE** **MEMORY SETUP** **PRODUCT** **FERTILISER** **NEW**

Name	Function
PRODUCT Button	The PRODUCT button displays an on-screen keyboard to allow entry of the new fertiliser name.
UNITS Button	The UNITS button displays the Select Units window. The units in which the fertiliser was purchased can then be selected from a drop down list.
IN TANK Button	The IN TANK button displays the Select Units In Tank window. The units in which the fertiliser is added to the tank or bin can then be selected from a drop down list.
DEFAULT RATE Button	The DEFAULT RATE button displays an on-screen numeric keypad on which the usual application rate for the product can be entered.
WITHHOLDING PERIOD Button	The WITHHOLDING PERIOD button displays an on-screen keyboard on which the withholding period (in days) can be entered.

DEFAULT COST Button	The DEFAULT COST button displays an on-screen numeric keypad on which the usual unit cost of the fertiliser can be entered.
ACCEPT Button	The ACCEPT button saves the changes, closes the window and returns to the Product Setup window.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

- **New Seed**

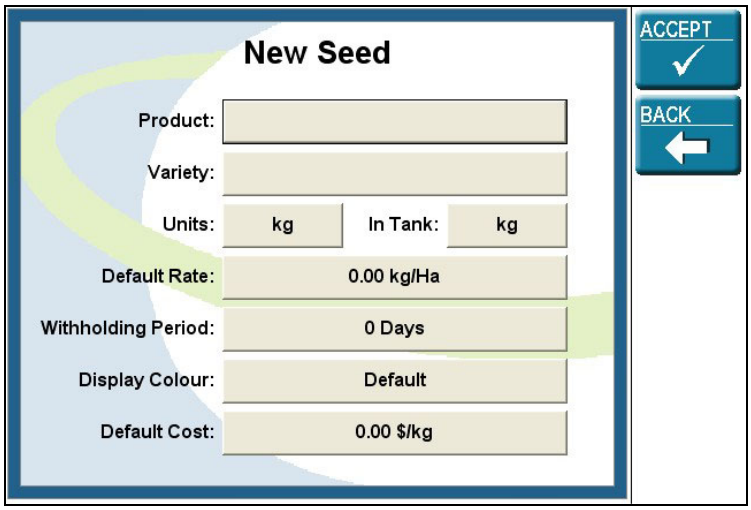


Figure 8-58: The New Seed Window

Overview: The New Seed window, see Figure 8-58 allows new seeds to be added. The Edit Seed Window is identical and allows all seed details to be changed.

Access: **SETUP** **MORE** **MEMORY SETUP** **PRODUCT** **SEED** **NEW**

Name	Function
PRODUCT Button	The PRODUCT button displays an on-screen keyboard to allow entry of the new seed name.
VARIETY Button	The VARIETY button displays an on-screen keyboard to allow entry of the new seed variety.
UNITS Button	The UNITS button displays the Select Units window. The units in which the chemical was purchased can then be selected from a drop down list.
IN TANK Button	The IN TANK button displays the Select Units In Tank window. The units in which the chemical is added to the tank can then be selected from a drop down list.
DEFAULT RATE Button	The DEFAULT RATE button displays an on-screen numeric keypad on which the usual seeding rate for the seed variety can be entered.

WITHHOLDING PERIOD Button	The WITHHOLDING PERIOD button displays an on-screen keyboard on which the withholding period (in days) can be entered.
DISPLAY COLOUR Button	The DISPLAY COLOUR button displays a colour palette from which a colour can be selected to represent the seed. Fields sown with the seed will then be displayed in the selected colour in the office planning software.
DEFAULT COST Button	The DEFAULT COST button displays an on-screen numeric keypad on which the usual unit cost of the chemical can be entered.
ACCEPT Button	The ACCEPT button saves the changes, closes the window and returns to the Product Setup window.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.15.4 Season Setup

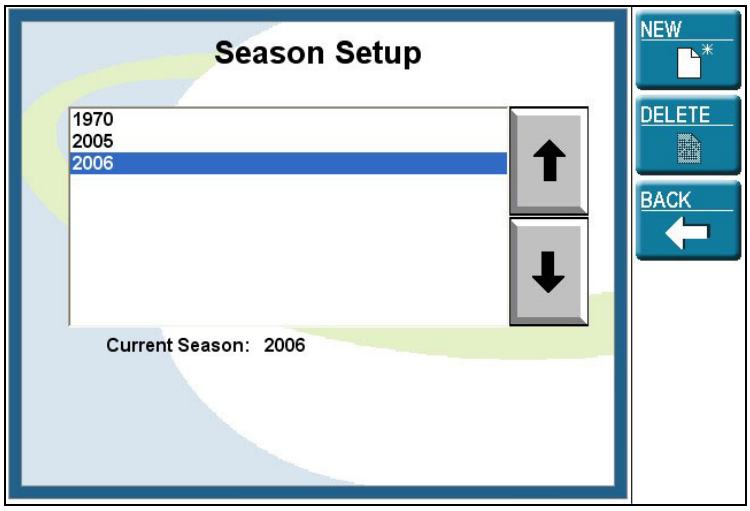


Figure 8-59: The Season Setup Window

Overview: The Season Setup window, see Figure 8-59 allows the season to be changed.

Access: **SETUP** **MORE** **MEMORY SETUP**

Name	Function
↑ (UP) Button	The UP button selects the previous season.
↓ (DOWN) Button	The DOWN button selects the next season.
NEW Button	The NEW button displays a warning message advising that all tanks must be emptied and all treatments completed for the currently selected season, and requesting confirmation of the NEW action. When OK is touched a keyboard is displayed to allow the new season to be entered.
DELETE Button	The DELETE button displays a window seeking confirmation to delete all data in the selected season. It also gives the option to keep a summary of treatments recorded for the season, deleting any treatment maps. When OK is pressed, the selected season will be deleted.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

8.3.16 FieldNET Setup

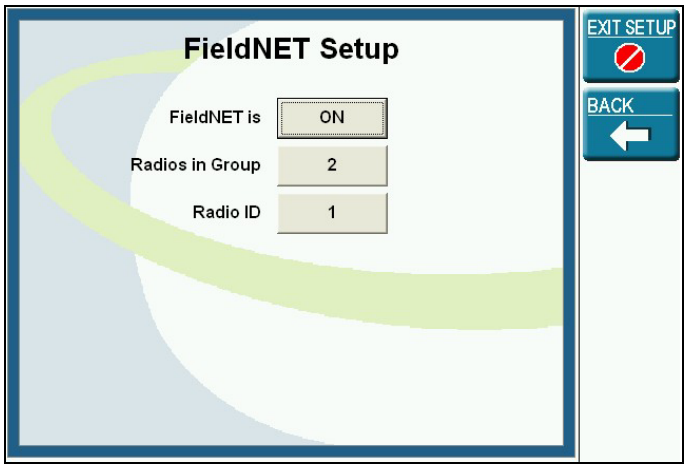


Figure 8-60: The FieldNET Setup Window

Overview: The FieldNET Setup window, see Figure 7-42 allows FieldNET to be turned ON or OFF, the total number of radios in the group and their identities to be changed. Refer to Section 11 for more information about FieldNET setup.

Access: **SETUP** **MORE** **FIELDNET SETUP**

Name	Function
FIELDNET Button	The FIELDNET button turns FieldNET ON or OFF.
RADIOS IN GROUP Button	The RADIOS IN GROUP button toggles between 2, 3 and 4 and indicates the total number of radios to be in the group up to a maximum of 4. The default value is 2.
RADIO ID Button	The RADIO ID button identifies each vehicle in the group. The selected ID must be unique within the group for FieldNET to function correctly.
EXIT SETUP Button	The EXIT SETUP button will close the Window and return to the Main menu.
BACK Button	The BACK button will close the Window and return to the previous Menu.

8.4 Records

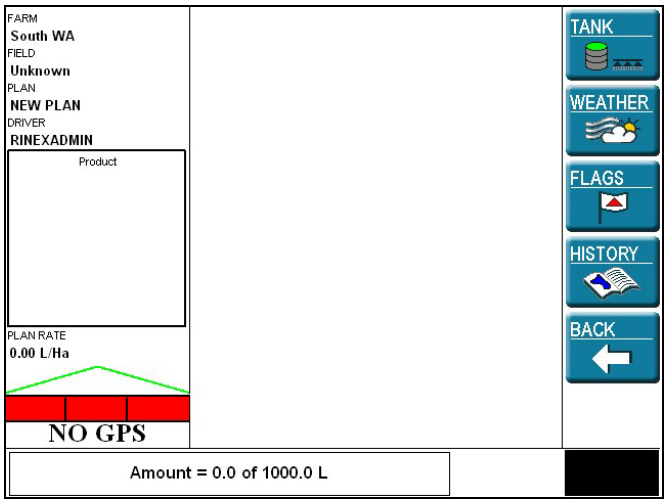


Figure 8-61: The Records Menu

Overview: The Records menu as illustrated in Figure 8-61 allows treatment records to be viewed and gives access to operations such as tank and store management, weather information recording and flags.

Access: **RECORDS**

Name	Function
TANK Button	The TANK button selects the Tank sub-menu to allow treatment plans to be added or amended, the tank to be filled or dumped and the product store to be maintained. If the Master Switch is ON the TANK button changes to the RATE button.
RATE Button	The RATE button selects the Rates windows to allow the flow rate to be changed while continuing treatment . The RATE button only appears if the Master Switch is ON.
WEATHER Button	The WEATHER button selects the Weather sub-menu to allow weather records to be maintained.
FLAGS Button	The FLAGS button selects the Flags sub-menu to allow flags to be added to the map.
HISTORY Button	The HISTORY button selects the History window, to allow archived treatment records to be viewed.
BACK Button	The BACK button returns the system to the Main menu.

8.4.1 Tank Menu

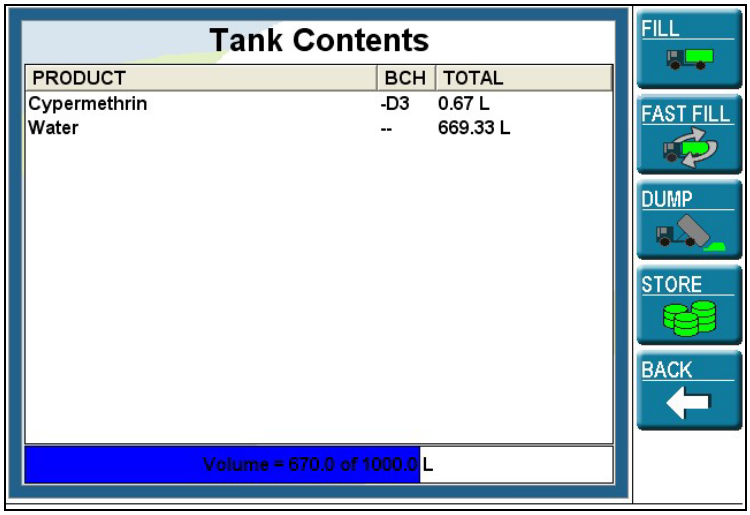


Figure 8-62: Tank Contents Window

Overview: The Tank Contents window as illustrated in Figure 8-62 allows tank contents to be viewed or dumped, treatment plans to be selected or added, the tank to be filled and the product store to be maintained.

Access: RECORDS TANK

Name	Function
FILL Button	The FILL button displays Select Fill Details window to allow a treatment plan to be selected, created or deleted and target field to be selected.
FAST FILL Button	The FAST FILL button displays the Add To Tank window with the same fill mix displayed as the last load. This allows the driver to quickly top up the tank.
DUMP Button	The DUMP button displays the Dump Tank window to either completely empty the tank or specify an amount to remain in the tank.
STORE Button	The STORE button displays the Store window and menu to allow adding and deleting batches to/from the store, and changing batch information.

Name	Function
BACK Button	The BACK button returns the system to the Records Menu.
PRODUCT	The PRODUCT column displays the name of each product in the tank.
BCH	The BCH column displays the abbreviated batch number of the product.
TOTAL	The TOTAL column displays the total amount of each product left in the tank.

8.4.1.1 Select Fill Details

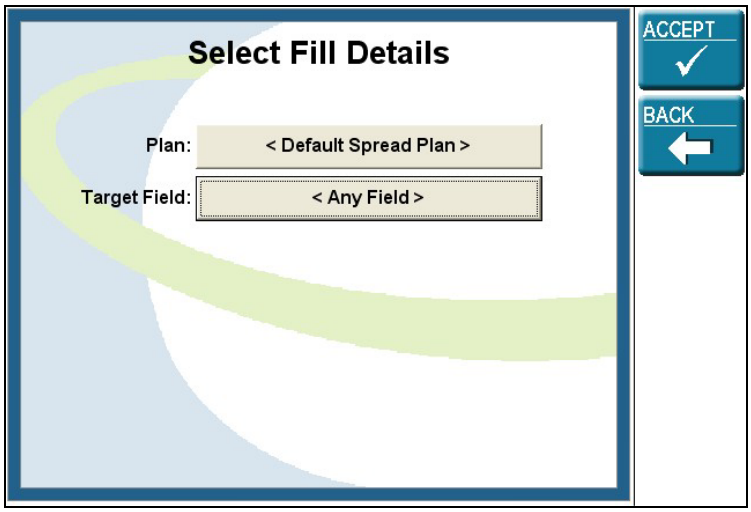


Figure 8-63: The Select Fill Details Window

Overview: The Select Fill Details window, see Figure 8-63 allows the treatment plan and target field to be selected.

Access: **RECORDS** **TANK** **FILL**

Name	Function
PLAN Button	The PLAN button displays the Select Plan window, where treatment plans can be added, changed,deleted and selected.
TARGET FIELD Button	The TARGET FIELD button displays the Select Field window and menu to allow a field to be selected. If a default plan has been selected on the Plan button, then the Target Field button automatically displays "Any Field" and does not allow selection of a specific field.
ACCEPT Button	The ACCEPT button saves the changes, closes the window and displays the Add To Tank window.
BACK Button	The BACK button closes the Window and return to the Tank Contents window without making any changes.

- **Add To Tank**

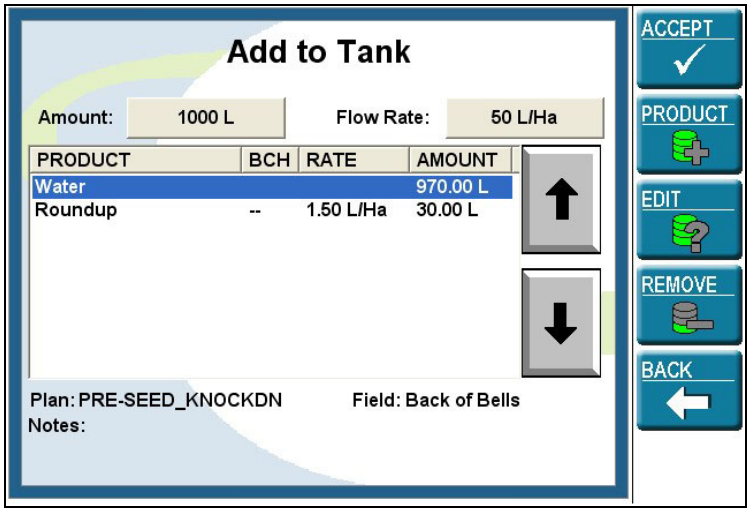


Figure 8-64: Add To Tank Window

Overview: The Add To Tank window, see Figure 8-64 allows the amount in the tank, the flow rate and product selection and quantities to be changed.

Access: **RECORDS** **TANK** **FILL** **ACCEPT** **or** **RECORDS** **TANK** **FAST FILL**

Name	Function
↑ (UP) Button	The UP button highlights the previous product in the mix list.
↓ (DOWN) Button	The DOWN button highlights the next product in the mix list.
AMOUNT Button	The AMOUNT button displays a numeric keypad to allow the total volume to be added to tank to be entered.
FLOW RATE Button	The FLOW RATE button displays a numeric keypad to allow the application/flow rate to be entered.
ACCEPT Button	The ACCEPT button saves any changes, changes the tank status to Full, closes the window and displays the Records menu.
PRODUCT Button	The PRODUCT button displays the New Product window to allow product details to be added, changed or deleted. See Section 8.3.15.3 for more information about changing product details.

Name	Function
EDIT Button	The EDIT button displays the Edit Product window to allow a product to be changed.
REMOVE Button	The REMOVE button removes the selected product from the list of products to be added to the tank.
BACK Button	The BACK button closes the Window and return to the Tank Contents window without making any changes.

- **Part Fill Tank**

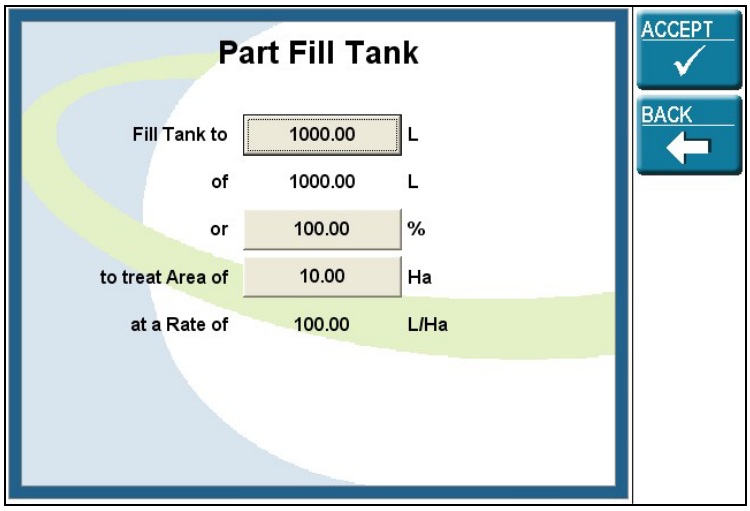


Figure 8-65: The Part Fill Tank Window

Overview: The Part Fill Tank window, see Figure 8-65 allows the total volume of product in the tank to be changed. This can be specified as either:

- Volume (FILL TANK TO button)
- Percentage of the capacity of the tank (OR % button)
- Area to be treated (TO TREAT AREA OF button).

Specifying any of these quantities automatically calculates the other values.

Access: **RECORDS** **TANK** **FILL** **ACCEPT** **AMOUNT**

Name	Function
FILL TANK TO Button	The FILL TANK TO button displays an on-screen numeric keypad to allow the total volume of product mix to be placed in the tank to be entered.
OF Field	The OF field displays the total capacity of the tank, as set in **SETUP** **VEHICLE SETUP** **RIG SETUP** **EDIT** **TANK SETTINGS**

Name	Function
OR % Button	The OR % button displays an on-screen numeric keypad to allow the percentage of the total amount of the tank product mix to be placed in the tank to be specified.
TO TREAT AREA OF Button	The TO TREAT AREA OF button displays an on-screen numeric keypad to allow the area to be treated to be specified. The amounts of each product and the total volume level the tank is to be filled to will then be automatically calculated.
AT A RATE OF Field	The AT A RATE OF field displays the flow rate as specified in the selected treatment plan. This can be changed by touching the Flow Rate button on the Add To Tank window.
ACCEPT Button	The ACCEPT button saves the changes, closes the window and displays the Add To Tank Window.
BACK Button	The BACK button closes the window and displays the Add To Tank Window.

- **Select Plan**

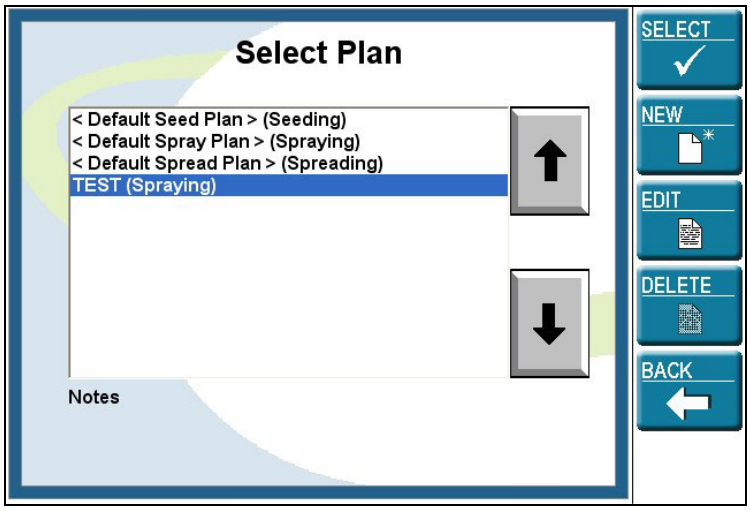


Figure 8-66: The Select Plan Window

Overview: The Select Plan window, see Figure 8-66 allows treatment plans to be created, changed, deleted and selected.

Access: RECORDS TANK FILL PLAN

Name	Function
(UP) Button	The UP button highlights the previous plan.
(DOWN) Button	The DOWN button highlights the next plan.
SELECT Button	The SELECT button selects the highlighted plan, closes the window and returns to the Select Fill Details window.
NEW Button	The NEW button displays the New Plan window to allow details of the new plan to be entered.
EDIT Button	The EDIT button displays the selected plan for editing.
DELETE Button	The DELETE button displays a message seeking confirmation to delete the selected plan. When OK is pressed, the selected plan will be deleted.
BACK Button	The BACK button closes the Window and return to the Select Fill Details window.

- **Plan**

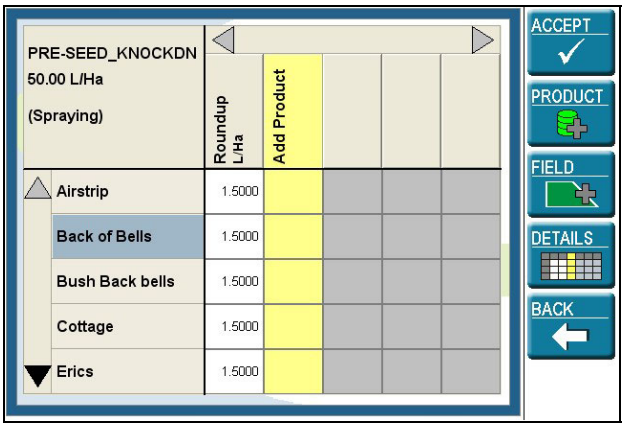


Figure 8-67: The Plan Window

Overview: The Plan window, see Figure 8-67 allows treatment plans to be created or changed.

Access: **RECORDS** **TANK** **FILL** **PLAN** **NEW** or **EDIT**

Name	Function
ACCEPT Button	The ACCEPT button displays a message seeking confirmation that the new plan will be saved with the nominated name (this message is not displayed for an existing plan which is changed). When OK is pressed it saves the changes, closes the window and displays the Select Plan window.
PRODUCT Button	The PRODUCT button displays the Select Product window to allow a product to be created, changed, deleted or selected (for addition to the plan). See Section 8.3.15.3 for further information about adding and changing product information.
FIELD Button	The FIELD button displays the Select Field window to allow a field to be selected or created for addition to the plan. See Section 8.3.15.1 Field Setup for more information about adding fields.
DETAILS Button	The DETAILS button displays the Plan Details window to allow the plan name, type and application rate (spray plans only) to be added or changed.

Name	Function
BACK Button	The BACK button closes the Window and returns to the Select Plan window without making any changes.

Hints and Tips:

- *Touching the relevant part of the plan will open the appropriate window for editing that plan attribute. E.g., touching the square containing the plan name will open the Plan Details window. See Section 7.1.1.*

- **Select Field - List View**

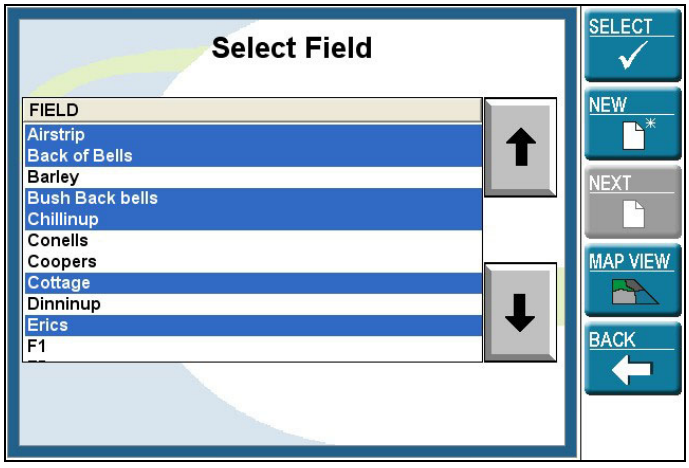


Figure 8-68: The Select Field Window in List View

Overview: The Select Field window, see Figure 8-68 allows fields to be added to the plan.

Access: RECORDS TANK FILL PLAN FIELD

Name	Function
(UP) Button	The UP button scrolls up the list of fields.
(DOWN) Button	The DOWN button scrolls down the list of fields.
SELECT Button	The SELECT button adds selected (highlighted) fields to the plan, closes the window and returns to the Plan window.
NEW Button	The NEW button displays an on-screen keyboard to allow entry of a new field name. This button is not active in Map View.
NEXT Button	The NEXT button is not active in List View.
MAP VIEW Button	The MAP VIEW button changes the fields from being displayed in a list to being displayed as a map.
BACK Button	The BACK button closes the Window and returns Plan Window without making any changes.

- **Select Field - Map View**

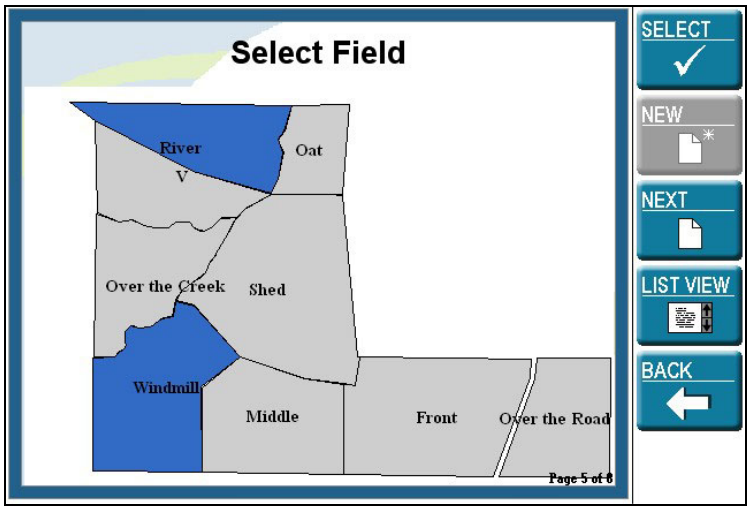


Figure 8-69: The Select Field Window in Map View

Overview: The Select Field window, see Figure 8-69 allows fields to be added to the plan by touching on the field boundary.

Access: RECORDS TANK FILL PLAN FIELD

Name	Function
SELECT Button	The SELECT button adds selected (highlighted) fields to the plan, closes the window and returns to the Plan window.
NEW Button	The NEW button is not active in Map View.
NEXT Button	The NEXT button displays the next page of the farm map. If there is only one page of the farm map then this button will do nothing. See Section 7.3.2 for more information about how to create new pages.
LIST VIEW Button	The LIST VIEW button changes the fields from being displayed in on a map to being displayed in a list.
BACK Button	The BACK button closes the Window and returns Plan Window without making any changes.

- **Plan Details**

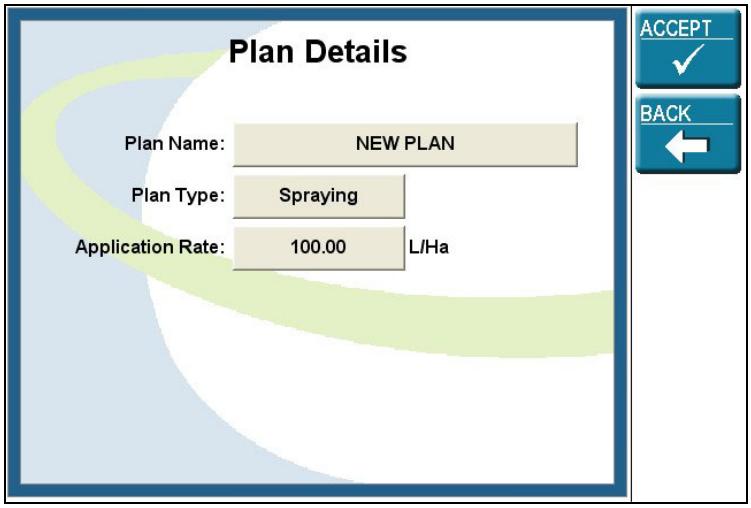


Figure 8-70: The Plan Details Window

Overview: The Plan Details window, see Figure 8-70 allows treatment plan name, type and application rate to be changed.

Access: RECORDS TANK FILL PLAN DETAILS

Name	Function
PLAN NAME Button	The PLAN NAME button displays an on-screen keyboard to allow the plan name to be entered.
PLAN TYPE Button	The PLAN TYPE button toggles through three choices: • Spraying • Spreading • Seeding
APPLICATION RATE Button	The APPLICATION RATE button displays an on-screen numeric keypad to allow entry of the overall rate at which treatment will be applied in this plan. The APPLICATION RATE button is not available when using a Spreading or Seeding plan as the product rate (specified in the Plan window) will determine the flow rate.
ACCEPT Button	The ACCEPT button saves the changes, closes the window and displays the Plan or window.
BACK Button	The BACK button will ignore any selected actions, close the Window and return to the Plan window.

8.4.1.2 Application Rate

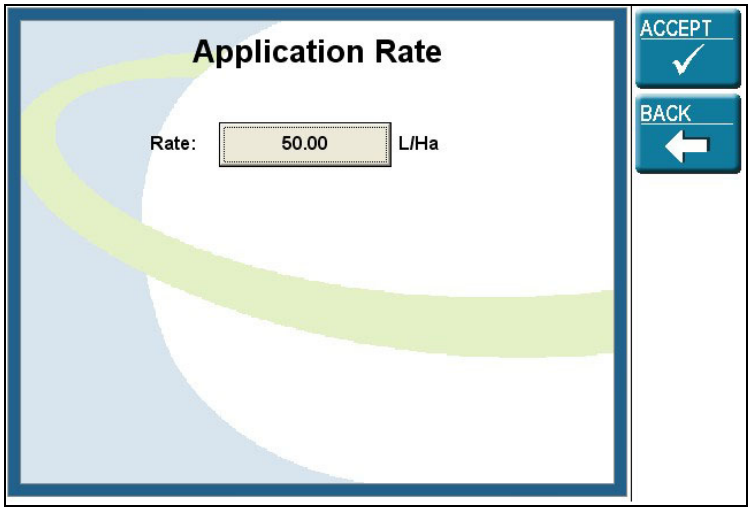


Figure 8-71: The Application Rate Window

Overview: The Application Rate window, see Figure 8-71 allows the flow rate (application rate) to be set or changed.

Access: **RECORDS** **TANK** **FILL** **ACCEPT** **RATE**
or **RECORDS** **RATE**

Name	Function
RATE Button	The RATE button displays an on-screen numeric keypad to allow the flow rate to be changed.
ACCEPT Button	The ACCEPT button saves the changes, closes the window and returns to the previous window.
BACK Button	The BACK button closes the window and returns to the previous window without making any changes.

Hints and Tips:

- *To change the rate on the go use the RATE button in the Records Menu. The RATE button will only be available when the Master Switch is ON.*

8.4.1.3 Dump Tank

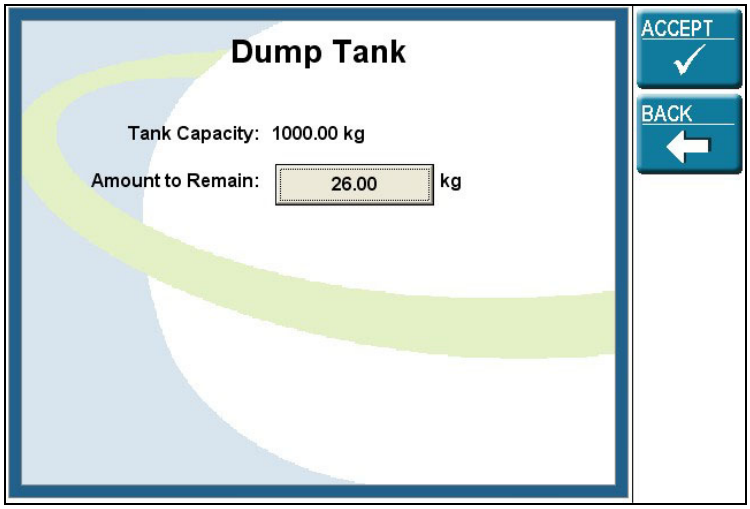


Figure 8-72: The Dump Tank Window

Overview: The Dump Tank window, see Figure 8-72 allows treatment plan name, type and application rate to be changed.

Access: RECORDS TANK DUMP

Name	Function
AMOUNT TO REMAIN Button	The AMOUNT TO REMAIN button displays an on-screen numeric keypad to allow the amount which should be left in the tank to be entered. The default amount is 0 (totally empty tank).
ACCEPT Button	The ACCEPT button closes the window and displays the Dumping Tank Contents window. When the OK button is pressed, the tank is emptied, leaving the amount specified on the Amount To Remain button.
BACK Button	The BACK button closes the window and returns to the Tank Contents window without changing the amount left in the tank.

8.4.1.4 Store

Figure 8-73: The Store Window

Overview: The Store window, see Figure 8-73 allows product batches to be added to the store, changed or deleted.

Access: **RECORDS** **TANK** **STORE**

Name	Function
CHEMICAL Tab	The CHEMICAL tab displays a list of all chemicals in the store.
FERTILISER Tab	The FERTILISER tab displays a list of all fertilisers in the store.
SEED Tab	SEED tab displays a list of all seeds in the store.
↑ (UP) Button	The UP button highlights the previous product in the list.
↓ (DOWN) Button	The DOWN button highlights the next product in the list.
ADD Button	The ADD button displays the New Batch window to allow details of the new batch of product to be entered.
EDIT Button	The EDIT button displays the Edit Batch window to allow the selected product batch details to be changed.

Name	Function
DELETE Button	The DELETE button displays a message seeking confirmation to delete the selected batch of product. When OK is pressed, the selected batch is deleted from the store.
BACK Button	The BACK button closes the Window and returns to the Tank Contents window without making any changes.
BATCH NUMBER Field	The BATCH NUMBER field displays the batch number of the highlighted product.
IN STORE Field	The IN STORE field displays the number of units of the highlighted batch of product remaining in the store.
TOTAL Field	The TOTAL field = IN STORE + USED.
USED Field	The USED field displays the number of units of the highlighted batch of product which have been used.

- **New or Edit Batch**

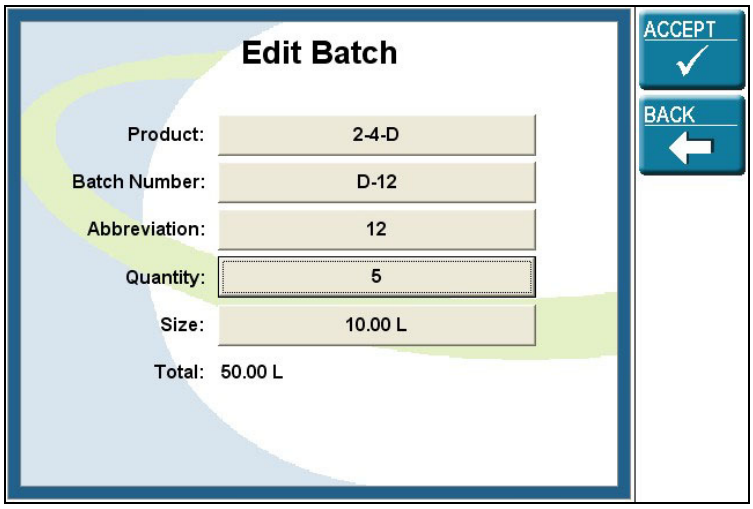


Figure 8-74: The Edit Batch Window

Overview: The Edit Batch window, see Figure 8-74 allows product batches to be added to the store, changed or deleted.

Access: **RECORDS** **TANK** **STORE** **ADD** **or** **EDIT**

Name	Function
PRODUCT Button	In Edit mode, the PRODUCT button displays the name of the product being changed. In Add mode, the PRODUCT button displays a list of all products in the store for selection and allows product details to be added, deleted or changed. See Section 8.3.15.3 for more information about adding or changing product details.
BATCH NUMBER Button	The BATCH NUMBER button displays an on-screen keyboard to allow entry of the batch number of the product.
ABBREVIATION Button	The ABBREVIATION button displays an on-screen keyboard to allow entry of an abbreviation, up to three characters, of the batch number.
QUANTITY Button	The QUANTITY button displays an on-screen keyboard to allow entry of the number of containers of product in the batch.

Name	Function
SIZE Button	The SIZE button displays an on-screen keyboard to allow entry of the full weight or volume of the product container.
TOTAL Field	The TOTAL field displays the total quantity (weight or volume) of the batch (= Quantity x Size).
ACCEPT Button	The ACCEPT button saves the changes, closes the window and returns to the Store window.
BACK Button	The BACK button closes the Window and returns to the Tank Contents window without making any changes.

8.4.2 Weather Menu

Recording weather information such as wind and temperature assists in evaluating problems such as why a certain chemical did not have an effect or who was to blame for killing the neighbour's crop. The GuideTRAX V3 system allows weather records to be manually entered during a treatment. The system is flexible in that any number of records can be entered for a particular treatment. The data is time stamped and recorded along with the other data for the application.

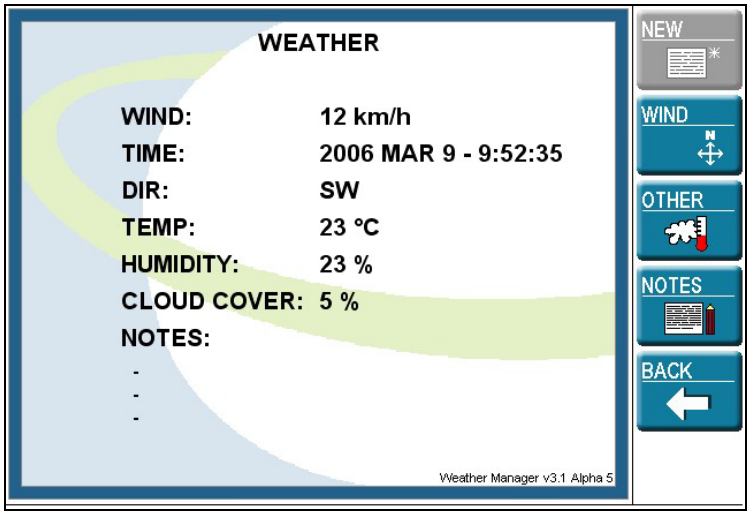


Figure 8-75: The Weather Window

Overview: The Weather window, see Figure 8-75 allows recording of weather data such as wind speed and direction, temperature, humidity and cloud cover.

Access: **RECORDS** **WEATHER**

Name	Function
NEW Button	The NEW button enables the weather menu buttons to allow entry of weather information. The Wind, Other and Notes buttons will change colour (blue) and can now be used.
WIND Button	The WIND button has no effect when the button is disabled (grey). Touch the New button first to enable the Wind button. A Wind window will display where wind speed and direction can be entered. See section 8.4.2.1 for more details.

Name	Function
OTHER Button	The OTHER button has no effect when the button is disabled (grey). Touch the New button first to enable the OTHER button. An Other Weather Info window will display where temperature, humidity and cloud cover data can be entered. See section 8.4.2.2 for more details.
NOTES Button	The NOTES button will has no effect when the button is disabled (grey). Touch the New button first to enable the Notes button. A Notes window will be displayed where three lines of notes can be entered. See section 8.4.2.3 for more details.
BACK Button	The BACK button returns to the Records menu. If a new weather record has been created, a message seeking confirmation of saving a new weather record will be displayed.

8.4.2.1 Wind Speed & Direction

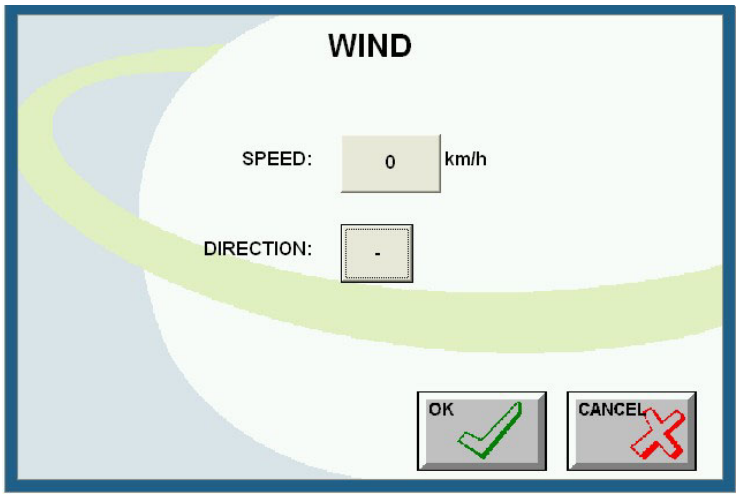


Figure 8-76: The Wind Window

Overview: The Wind window, see Figure 8-76 allows selecting wind speed and direction.

Access: RECORDS WEATHER NEW WIND

Name	Function
WIND Button	The WIND button will open a numeric keyboard window where a value for the wind speed can be entered.
DIRECTION Button	The DIRECTION button opens the Wind Direction window to allow selection of the wind direction.
OK Button	The OK button sets the new values and returns to the Weather menu
CANCEL Button	The CANCEL button will ignore the changes and return to the Weather menu.

- **Wind Direction**

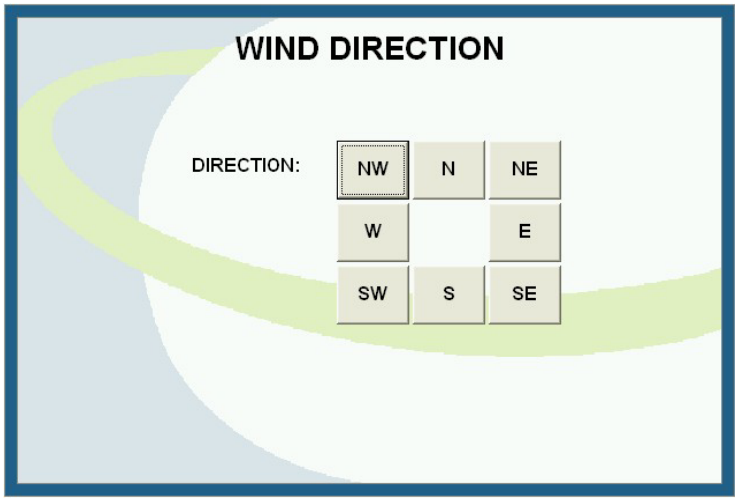


Figure 8-77: The Wind Direction Window

Overview: The Wind window, see Figure 8-77 allows selecting wind direction.

Access: **RECORDS WEATHER NEW WIND DIRECTION**

Name	Function
DIRECTION Button	Touching any of the 8 buttons will set the wind the direction and return to the Wind window.

8.4.2.2 Other Weather Information

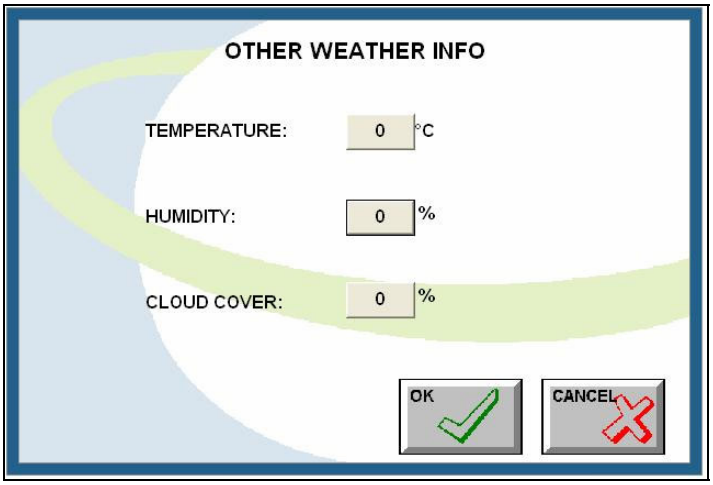


Figure 8-78: The Other Weather Info window

Overview: The Other Weather Info window, see Figure 8-78 allows entering of temperature, humidity and cloud cover information.

Access: **RECORDS** **WEATHER** **NEW** **OTHER**

Name	Function
TEMPERATURE Button	The TEMPERATURE button will open a numeric keyboard window where a value can be entered.
HUMIDITY Button	The HUMIDITY button will open a numeric keyboard window where a value can be entered.
CLOUD COVER Button	The CLOUD COVER button will open a numeric keyboard window where a value can be entered.
OK Button	The OK button sets the new values and returns to the Weather menu
CANCEL Button	The CANCEL button will ignore the changes and return to the Weather menu.

8.4.2.3 Notes

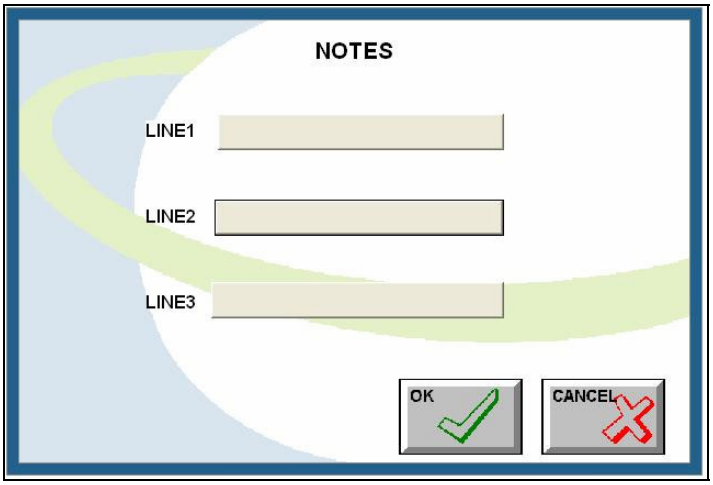


Figure 8-79: The Notes window

Overview: The Notes window, see Figure 8-79 allows the entering of brief textual notes.

Access: RECORDS WEATHER NEW NOTES

Name	Function
LINE Button	Touching on one of the three LINE buttons will open an alphanumeric keyboard window where notes can be entered.
OK Button	The OK button sets the new values and returns to the Weather menu
CANCEL Button	The CANCEL button will ignore the changes and return to the Weather menu.

8.4.3 Flags

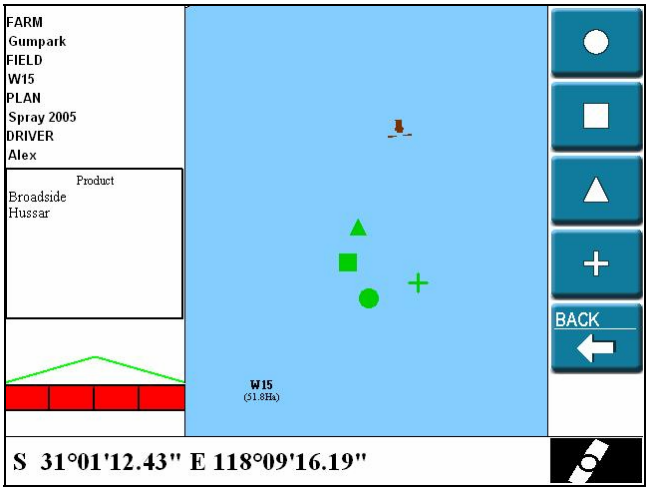


Figure 8-80: The Flags Window

Overview: The Flags window, see Figure 8-80 allows the option to assign four different types of flags during treatment. These can be used as markers to denote points of interest or field obstacles.

Access: **RECORDS** **FLAGS**

Button	Function
CIRCLE Button	Touching the CIRCLE button will place a circle marker in the current field location.
SQUARE Button	Touching the SQUARE button will place a square marker in the current field location.
TRIANGLE Button	Touching the TRIANGLE button will place a triangle marker in the current field location.
PLUS Button	Touching the PLUS button will place a plus marker in the current field location.
BACK Button	Touching the BACK button will return to the Records menu window.

8.4.4 History

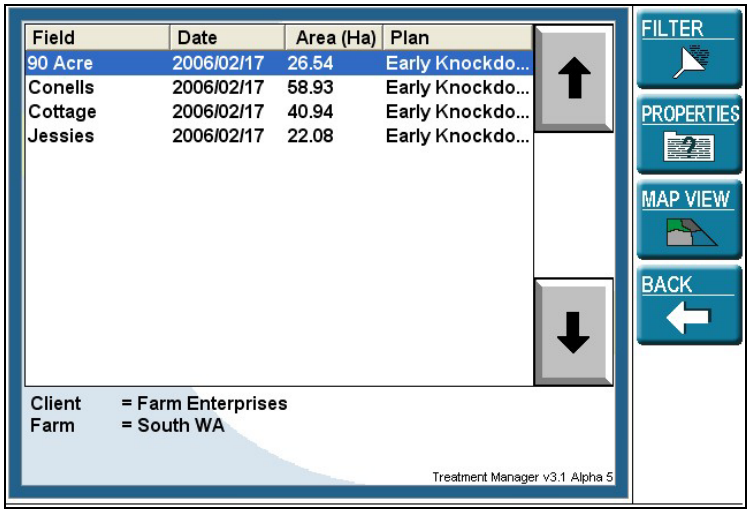


Figure 8-81: History Window

Overview: The History window as illustrated in Figure 8-81 allows treatment history records to be viewed and RePLAY paths to be loaded.

Access: RECORDS HISTORY

Name	Function
FILTER Button	The FILTER button displays the Select Filter Window to allow history records to be searched by selecting and specifying search filters.
PROPERTIES Button	The PROPERTIES button displays the Treatment Properties Window with details of the selected treatment.
MAP VIEW Button	The MAP VIEW button displays the selected treatment on the farm map.
BACK Button	The BACK button returns the system to the Records Menu.

8.4.4.1 Select Filter

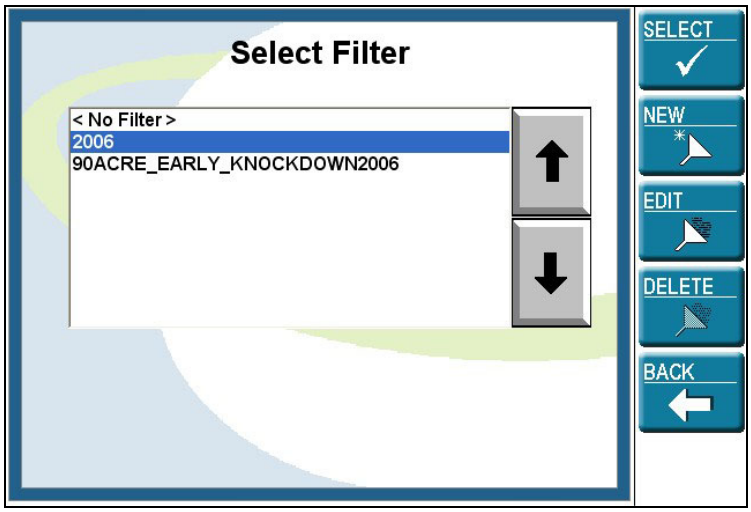


Figure 8-82: The Select Filter Window

Overview: The Select Filter window, see Figure 8-82 allows treatment history records to be viewed by filtering "in" only those records which meet certain selection criteria. Filters can select on season, field and plan.

Access: RECORDS HISTORY FILTER

Name	Function
↑ (UP) Button	The UP button highlights the previous filter in the list.
↓ (DOWN) Button	The DOWN button highlights the next filter in the list.
SELECT Button	The SELECT button selects the highlighted filter, closes the window and displays only those treatment records which meet the criteria specified in the selected filter.
NEW Button	The NEW button displays the New Filter window.
EDIT Button	The EDIT button displays the Edit Filter window.
DELETE Button	The DELETE button displays a message seeking confirmation of the delete action. When OK is touched, the selected filter is deleted and the Select Filter window is displayed.
BACK Button	The BACK button closes the window without making any changes and returns to the History window.

- **New and Edit Filter**

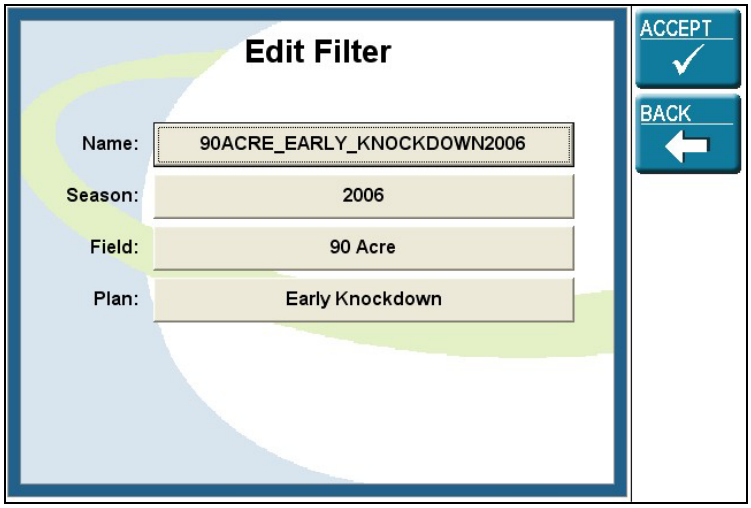


Figure 8-83: The Edit Filter Window

Overview: The New or Edit Filter windows, see Figure 8-83 allow filters to be created or edited. As both windows are virtually identical, only the Edit Filter window is shown here.

Access: **RECORDS** **HISTORY** **FILTER** **NEW** **or** **EDIT**

Name	Function
NAME Button	The NAME button displays an on-screen keyboard to allow the name of the filter to be entered or changed.
SEASON Button	The SEASON button displays a list of all seasons which have had treatment information recorded for them. This allows all seasons or a single season to be selected for the filter.
FIELD Button	The FIELD button displays a list of all seasons which have had treatment information recorded for them. This allows all fields or a single field to be selected for the filter.
PLAN Button	The PLAN button displays a list of all plans which have had treatment information recorded for them. This allows all plans or a single plan to be selected for the filter.
ACCEPT Button	The ACCEPT button saves the selected filter information, closes the window and returns to the Select Filter window.
BACK Button	The BACK button closes the window without making any changes and returns to the Select Filter window.

8.4.4.2 Treatment Properties

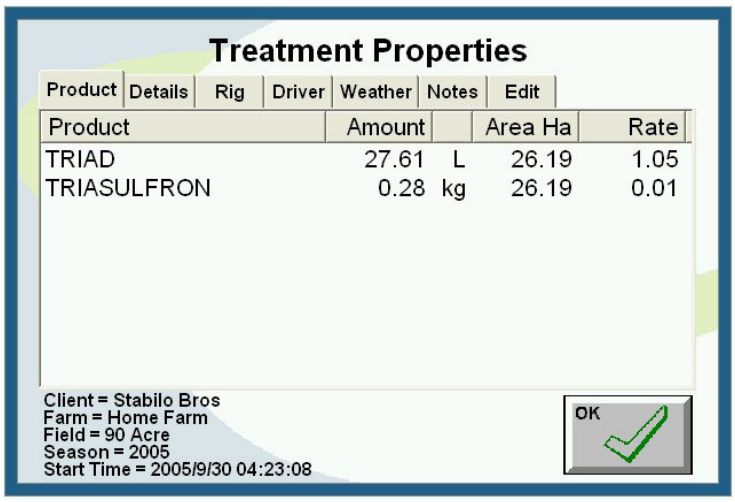


Figure 8-84: The Treatment Properties Window

Overview: The Treatment Properties window, see Figure 8-85 allows all recorded information about the selected field treatment to be viewed.

Access: **RECORDS** **HISTORY** **PROPERTIES**

Name	Function
PRODUCT Tab	The PRODUCT tab displays information about products used when treating the selected field.
DETAILS Tab	The DETAILS tab displays area, rate, duration, distance and speed information about the selected treatment.
RIG Tab	The RIG tab displays information about the vehicle configuration used in the selected treatment.
DRIVER Tab	The DRIVER tab displays information about drivers and their work when applying the selected treatment.
WEATHER Tab	The WEATHER tab displays weather information recorded at the time of the selected treatment.
NOTES Tab	The NOTES tab displays the weather notes recorded at the time of the selected treatment.
EDIT Tab	The EDIT tab allows the selected treatment to be Un-archived and for the guideline followed in this treatment to be replayed for a new treatment.

CLIENT	The CLIENT field shows the client name selected for the Current Job.
FARM	The FARM field shows the farm name selected for the Current Job.
FIELD	The name of the selected field about which treatment information is being displayed.
SEASON	The SEASON field shows the season in which the selected treatment was applied.
START TIME	The START TIME field shows the date and time when the selected treatment was started in this field.
OK Button	The OK button closes the window and returns to the Treatment History Window.

- **Product Tab**

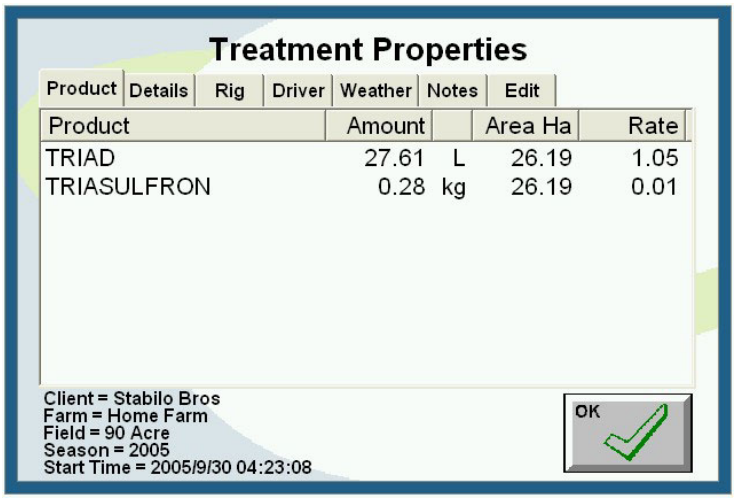


Figure 8-85: The Treatment Properties Product Window

Overview: The Treatment Properties Product window, see Figure 8-85 allows details of the product used in the selected field treatment to be viewed.

Access: **RECORDS** **HISTORY** **PROPERTIES** **PRODUCT**

Name	Function
PRODUCT Column	The PRODUCT column lists each product used when treating the selected field.
AMOUNT Column	The AMOUNT column displays the amount of each product used when treating the selected field.
AREA HA Column	The AREA HA column shows the area treated with each product.
RATE Column	The RATE column shows the average rate at which each product was applied.

• Details Tab

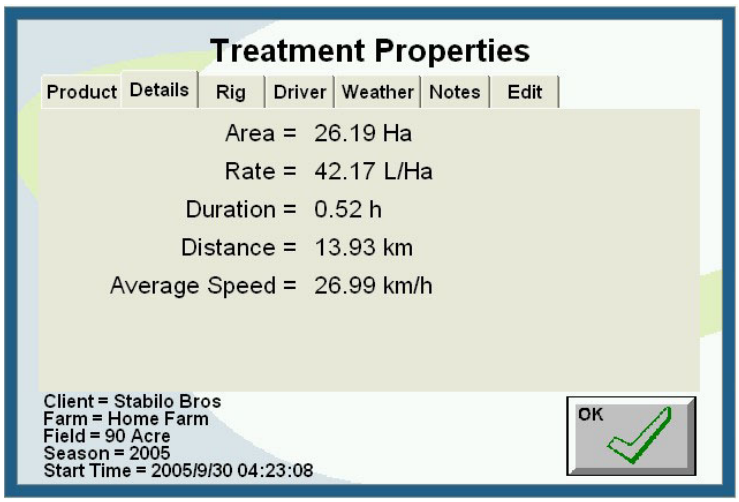


Figure 8-86: The Treatment Properties Details Window

Overview: The Treatment Properties Details window, see Figure 8-86 allows details of a particular treatment to be viewed.

Access: **RECORDS** **HISTORY** **PROPERTIES** **DETAILS**

Name	Function
AREA	The area treated in the selected field.
RATE	The average application rate for the treatment.
DURATION	The time taken to complete the field.
DISTANCE	The distance travelled when applying product to the selected field.
AVERAGE SPEED	The average speed recorded while applying product to the selected field.

- **Rig Tab**

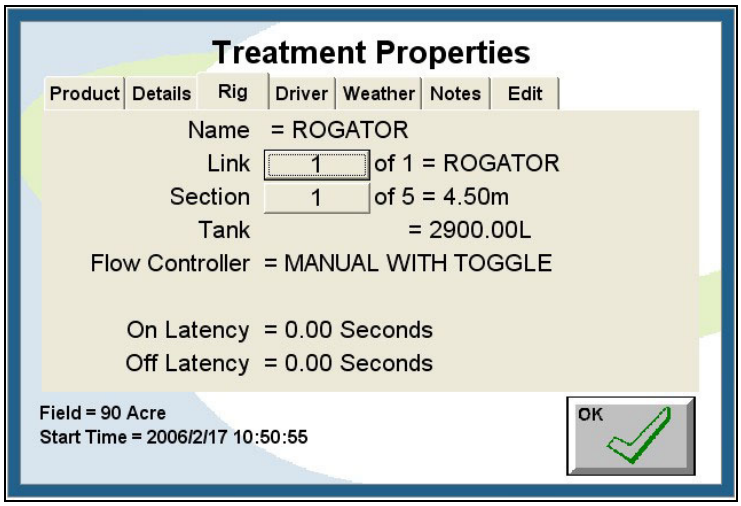


Figure 8-87: The Treatment Properties Rig Window

Overview: The Treatment Properties Rig window, see Figure 8-87 allows details of the rig used in a particular treatment to be viewed.

Access: **RECORDS** **HISTORY** **PROPERTIES** **RIG**

Name	Function
NAME	The name of the Rig used in the selected field.
LINK Button	The LINK button toggles through each link in the Rig (used in the selected field), and displays the name of the selected link on the right.
SECTION Button	The SECTION button toggles through each boom section and displays the width of each section (used in the selected field) on the right.
FLOW CONTROLLER	The Flow Controller used in the selected field.
ON LATENCY	The On Latency setting used in the selected field.
OFF LATENCY	The Off Latency setting used in the selected field.

- **Driver Tab**

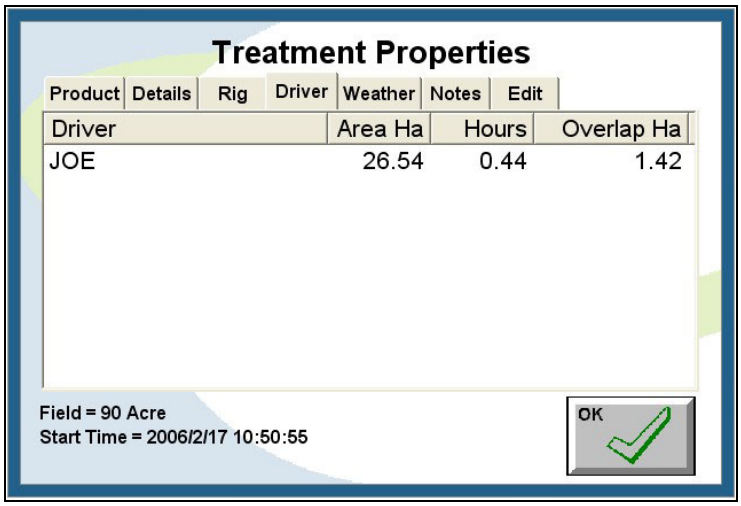


Figure 8-88: The Treatment Properties Driver Window

Overview: The Treatment Properties Driver window, see Figure 8-88 allows details of drivers who applied a particular treatment to be viewed.

Access: **RECORDS** **HISTORY** **PROPERTIES** **DRIVER**

Name	Function
DRIVER Column	The DRIVER column displays the names of the drivers who treated the field.
AREA HA Column	The AREA HA column displays the total area each driver completed in the field.
HOURS Column	The HOURS column displays the total number of hours each driver spent treating the field.
OVERLAP HA Column	The OVERLAP HA column displays the total area of treatment overlap expressed as a percentage by each driver (treated area less covered area = amount of product wasted = overlap area).

- **Weather Tab**

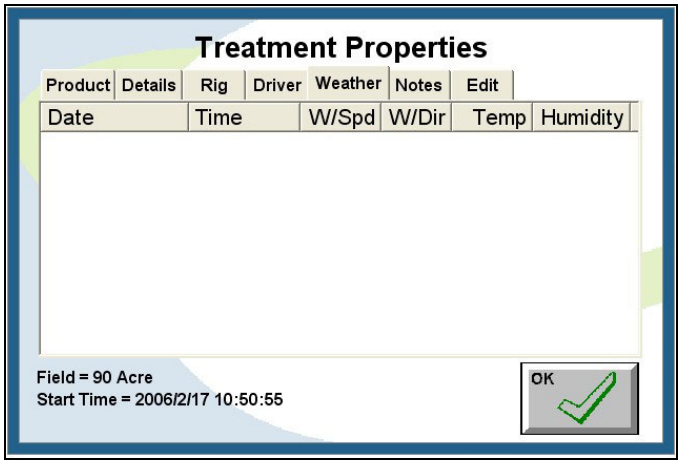


Figure 8-89: The Treatment Properties Weather Window

Overview: The Treatment Properties Weather window, see Figure 8-89 allows weather information recorded during a particular treatment to be viewed.

Access: **RECORDS** **HISTORY** **PROPERTIES** **WEATHER**

Name	Function
DATE Column	The DATE column displays the date the weather information was recorded.
TIME Column	The TIME column displays the time the weather information was recorded.
W/SPD Column	The W/SPD column displays the recorded wind speed.
W/DIR Column	The W/DIR column displays the recorded wind direction.
TEMP Column	The TEMP column displays the recorded temperature.
HUMIDITY Column	The HUMIDITY column displays the recorded humidity.

- **Notes Tab**

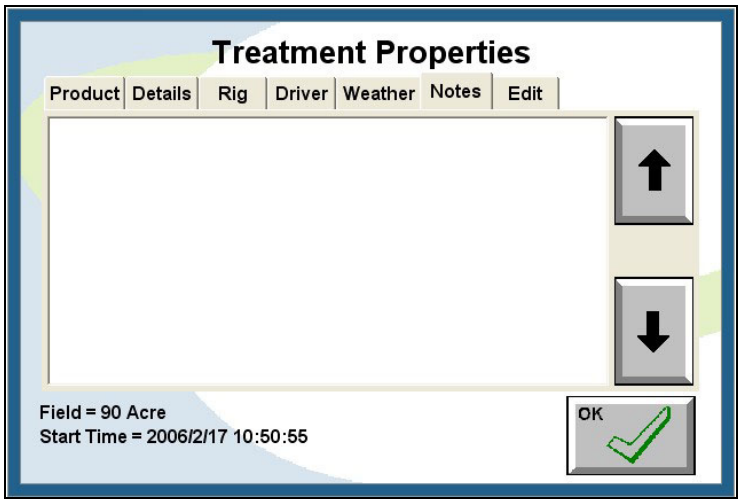


Figure 8-90: The Treatment Properties Notes Window

Overview: The Treatment Properties Notes window, see Figure 8-90 allows notes recorded during a particular treatment (in **RECORDS** **WEATHER** **NEW** **NOTES**)to be viewed.

Access: **RECORDS** **HISTORY** **PROPERTIES** **NOTES**

Name	Function
(UP) Button	The UP button displays the previous page of recorded notes.
(DOWN) Button	The DOWN button displays the next page of recorded notes.

- **Edit Tab**

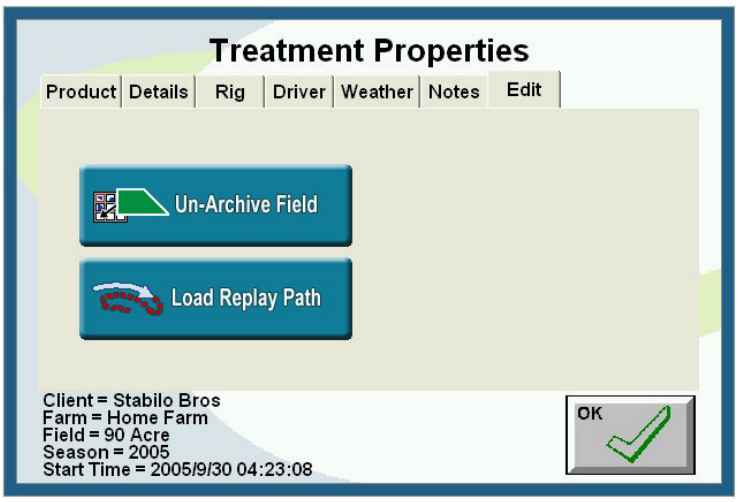


Figure 8-91: The Treatment Properties Edit Window

Overview: The Treatment Properties Edit window, see Figure 8-91 allows a particular treatment to be un-archived or its path to be loaded for RePLAY guidance.

Access: RECORDS HISTORY PROPERTIES EDIT

Name	Function
UN-ARCHIVE FIELD Button	The UN-ARCHIVE FIELD button displays a message seeking confirmation and when OK is pressed, removes the selected field from permanent memory and places it in an empty Field Memory slot so that more treatment can be added to the field.
LOAD REPLAY PATH Button	The LOAD REPLAY PATH button allows the selected treatment to be saved as a RePLAY file so that the path of the treatment can be used as the guideline in a new treatment. See Section 5.2 for more details.

8.4.4.3 Map View

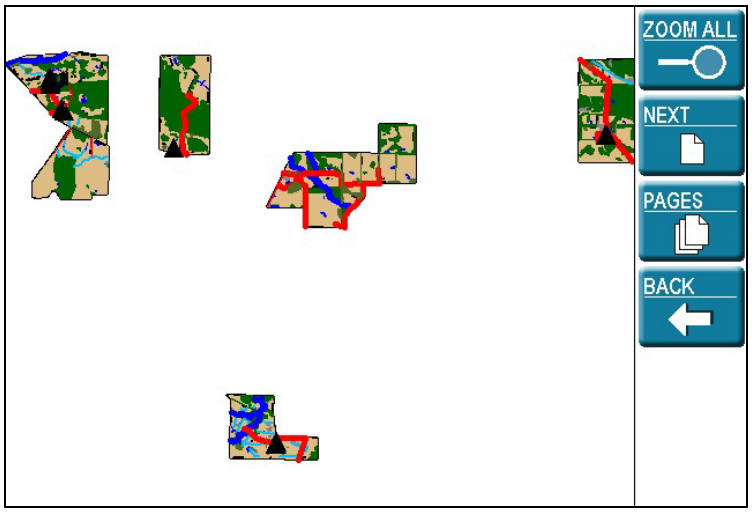


Figure 8-92: The Map View Window

Overview: The Map View window, see Figure 8-92 allows the farm map to be viewed and displays the treatment map for the field selected in the Treatment Properties window.

Access: **RECORDS** **HISTORY** **MAP VIEW**

Name	Function
ZOOM ALL Button	The ZOOM ALL button displays the entire farm map on the screen.
NEXT Button	The NEXT button toggles through each page of the farm map.
PAGES Button	The PAGES button displays the Page Setup Menu to allow pages of the map to be created and deleted.
BACK Button	The BACK button closes the window and returns to the Treatment History window.

- **Page Setup**

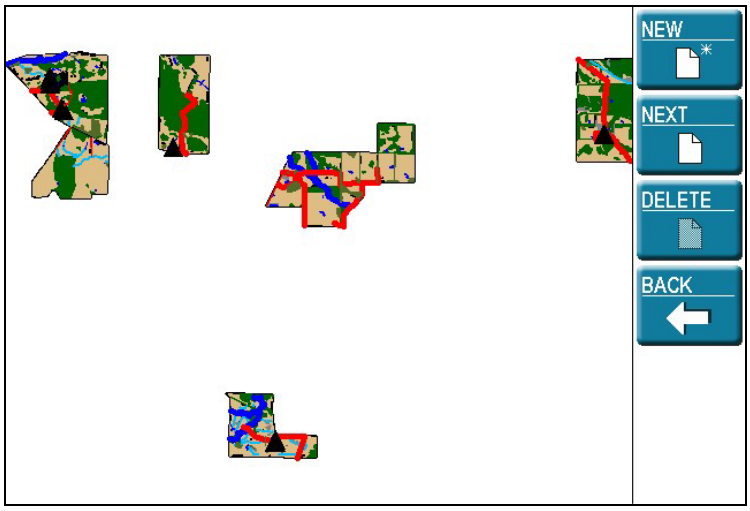


Figure 8-93: The Page Setup Menu

Overview: The Page Setup menu, see Figure 8-93 allows the farm map to be viewed and pages created for a close up view of particular fields or groups of fields.

Access: RECORDS HISTORY MAP VIEW PAGES

Name	Function
NEW Button	The NEW button saves that part of the farm map which can be seen on the screen as a new page.
NEXT Button	The NEXT button displays the next page of the farm map once a page has been saved.
DELETE Button	The DELETE button deletes the displayed page of the farm map.
BACK Button	The BACK button closes the window and returns to the Treatment History window.

9

AutoSPRAY

The AutoSPRAY controller is designed to connect to your existing Spray Controller and the Saturn H guidance system to provide automatic boom section control. This will greatly reduce the need for manually switching sections ON or OFF when going over previously sprayed crop or pasture. Its ability to automatically control the spraying state of the sections relieves the operator from an arduous task which requires split second timing on multiple switches. The AutoSPRAY controller can be interfaced with most existing spray rate controllers.

The AutoSPRAY controller can be used in many situations as shown in Figure 9-1.

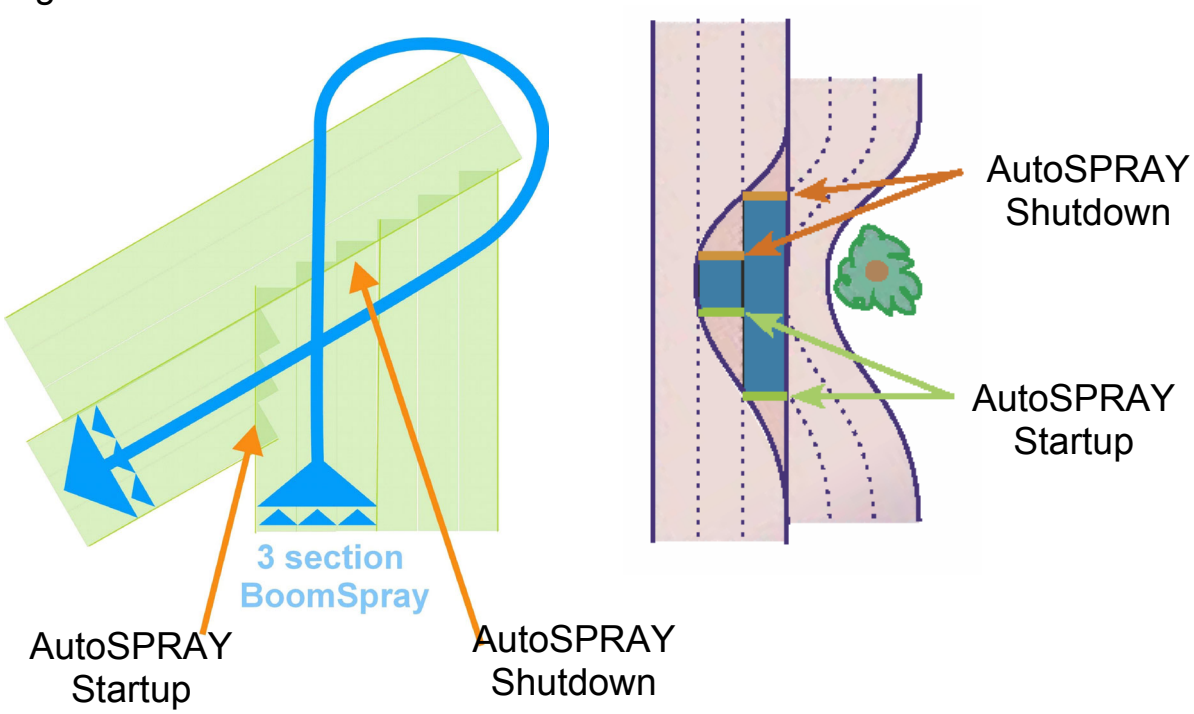


Figure 9-1: AutoSPRAY Uses

9.1 AutoSPRAY Overview

The AutoSPRAY is compatible with a wide variety of spray rate controllers and is easily installed. RINEX have a range of easy to install interface cables available for some of the more popular spray rate controllers on the market. RINEX also manufacture a generic AutoSPRAY cable which can be used in place of a controller specific cable and is therefore compatible with the full range of spray rate controllers. The list of compatible AutoSPRAY controllers can be found by visiting www.rinex.com.au or your local dealer.

9.2 Configuring AutoSPRAY

Prior to using the AutoSPRAY option it is necessary to ensure that the overall system is correctly configured to ensure that system accurately controls the spray rate controller.

9.2.1 Enabling the AutoSPRAY Option

In order to use the AutoSPRAY option it will be necessary to first enter the correct password and ensure that the option is enabled as described in Section 6.1.

With the AutoSPRAY function enabled on the system, AutoSPRAY can be switched ON & OFF as necessary via the AutoSPRAY Window see Figure 9-2.

Access: **SETUP** **AUTOSPRAY**

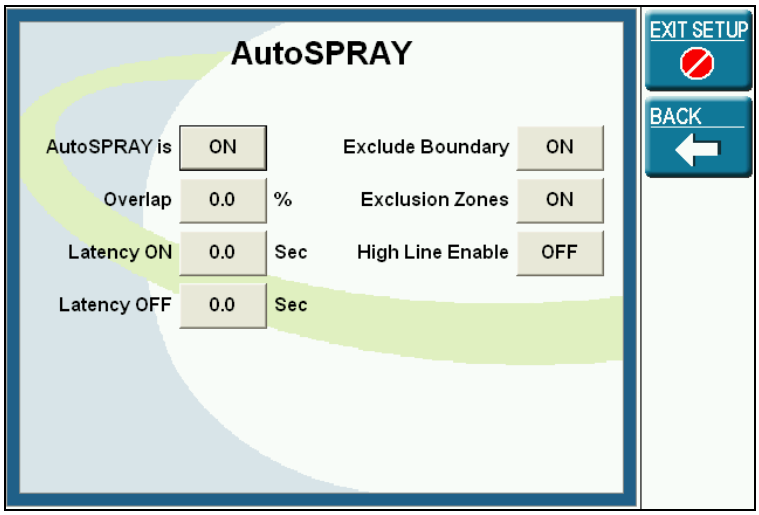


Figure 9-2: The AutoSPRAY Window

9.2.2 Setting AutoSPRAY Overlap

AutoSPRAY controls the overlap tolerance which is used to decide when to turn valves on or off. When set to its default of 0%, the system will turn the valves on whenever any part of the sensed area has not been sprayed. It is effectively the percent of miss that the system will tolerate. If the value is increased, the system will not turn the valves on when traversing over a small missed area such as a line between two spray swaths.

9.2.3 Setting AutoSPRAY Latency Values

The most critical parameter with AutoSPRAY is the latency value. Latency is the timing delay from when the switch status is toggled between ON and OFF, and to when the spray nozzle on the boom starts and stops spraying of the water and chemical mixture.

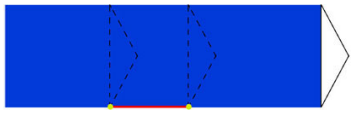
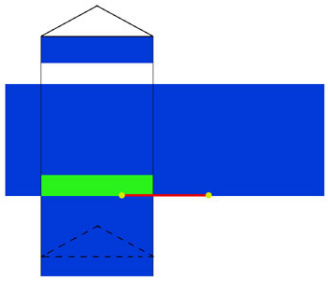
The latency value will vary between different spray rigs and is beyond the scope of this manual to describe why they vary. However the fact that they do vary is important and the values must be accurately determined. Furthermore the latency may vary between switching ON and Switching OFF, hence it is necessary to determine both values.

Once the latency values have been computed they are recorded in the AutoSPRAY Window as shown in Figure 9-2.

9.2.3.1 Determining the AutoSPRAY Latency

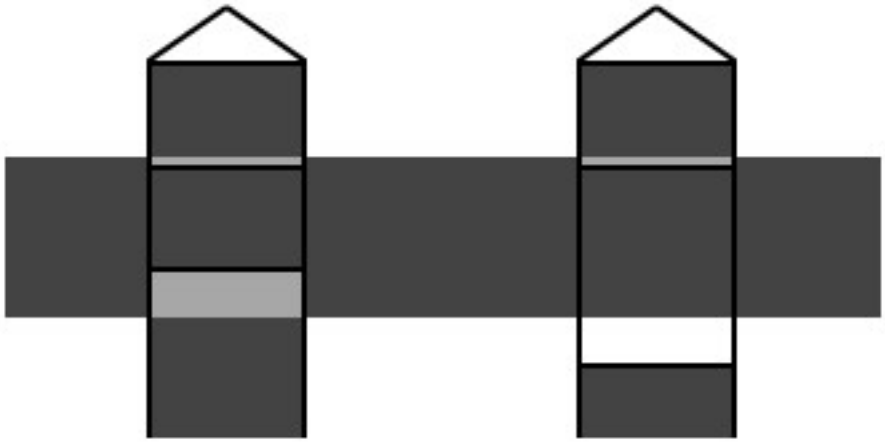
The quickest way to estimate the latency of the sprayer is to use a stop watch, turn a spray section on and time the delay between this action and when spray is coming out the nozzle on the boom. This may be a very small value (a few tenths of a second and hard to measure accurately).

For a more accurate measurement, use the following procedure:

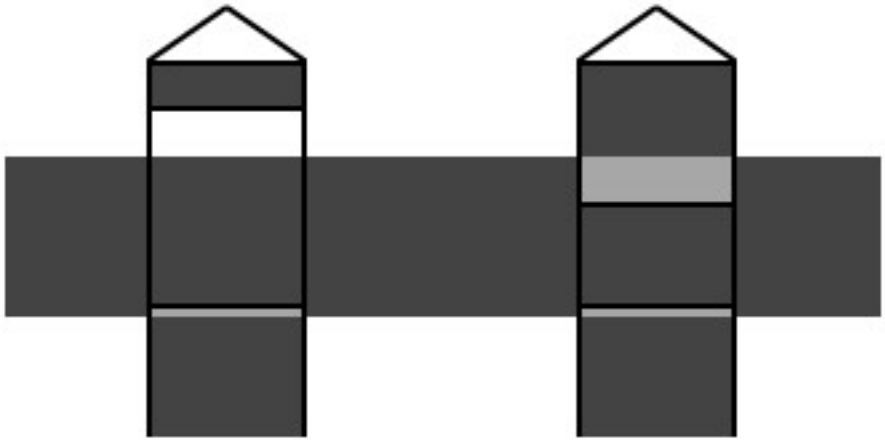
Step	Instruction	Diagram
	OFF Latency	
1	Drive slowly in a straight line down the field for 200m with the sprayer on. The tank should have water only for the purpose of this exercise. Have another person mark the end nozzle of the boom with two pegs and a rope half way along the spray run.	
2	At right angles to the pervious spray run, spray at 20km/hr across the spray mark with one end of the boom crossing over the rope. Ensure that you have allowed enough distance before crossing over the line for the boom trailer to straighten up behind the tractor. Have someone measure the distance from the rope to where the sprayer actually turned off.	

Step	Instruction	Diagram
3	Metric Calculations Speed(km/h) = The speed of the vehicle in kilometres per hour Distance(m) = The distance from the rope to where the sprayer reacted in metres. Calculate the latency using this formula: Latency(s) = Distance(m) ÷ Speed(km/h) x 3.6 For example Assuming the operator was travelling at 20km/hr and the distance from the rope to where the sprayer reacted is 5m: Latency(s) = 5(m) ÷ 20(km/h) x 3.6 = 0.9 seconds.	
4	Imperial Calculations Speed(mph) = The speed of the vehicle in miles per hour. Distance(ft) = The distance from the rope to where the sprayer reacted in feet. Calculate the latency using this formula: Latency(s) = Distance(ft) ÷ Speed(mph) x 0.68 For example Assuming the operator was travelling at 12mph and the distance from the rope to where the sprayer reacted is 16ft: Latency(s) = 16(ft) ÷ 12(mph) x 0.68 = 0.9 seconds	
5	Repeat steps 1 to 4, altering the latency figure by plus or minus 0.1 seconds, until the optimum result is achieved.	
	ON Latency	
6	Often the latency time for the sprayer to switch on will differ from the time to switch off. Repeat Steps 1 to 5 above looking at the reaction time to turn on, to determine the ON latency.	

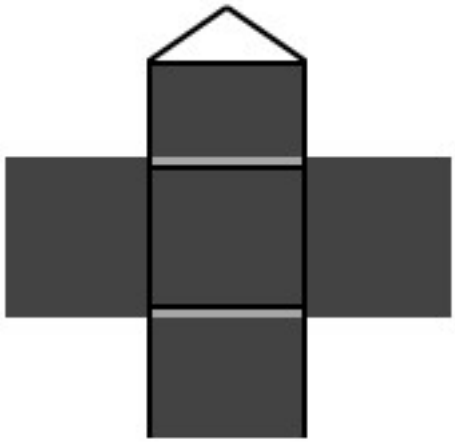
The following examples show possible scenarios and how to resolve the latency settings for optimum control of the AutoSPRAY.



OFF Latency Set Too Low OFF Latency Set Too High



ON Latency Set Too Low ON Latency Set Too High



Optimum ON and OFF Latency Settings

9.2.4 AutoSPRAY Section Translation

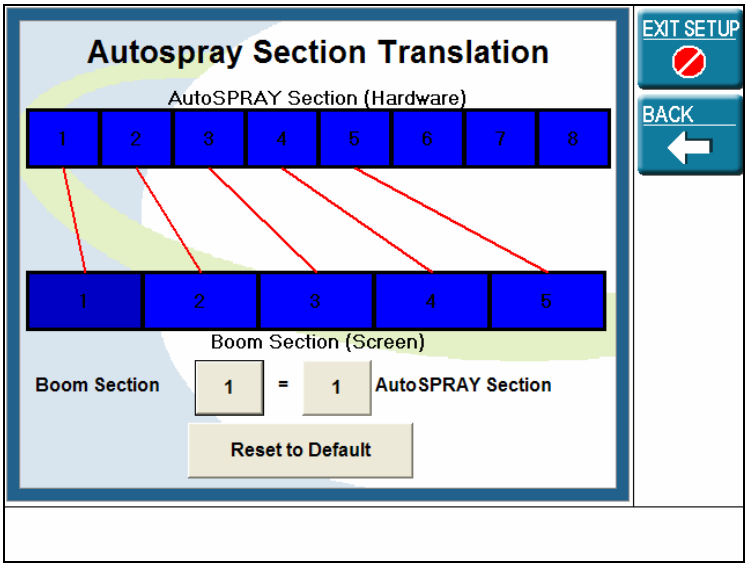


Figure 9-3 The AutoSPRAY Section Translation Window

Overview: The AutoSPRAY Translation window, see Figure 9-3, allows AutoSPRAY sections to be remapped. The map displays the eight AutoSPRAY hardware sections, the number of defined boom sections and the map between them.

Access: **SETUP** then hold the **AUTOSPRAY** button down for three seconds.

Item	Description
BOOM SECTION Button	The BOOM SECTION button toggles from 1 to the highest number of boom sections that have been set for the vehicle has in **SETUP** **VEHICLE SETUP** **RIG SETUP** **EDIT** **BOOM SETTINGS**; and selects the boom section to be remapped.
AUTOSPRAY SECTION Button	The AUTOSPRAY SECTION button toggles from 1 to 8 and selects the number that the current Boom Section number is being remapped to.

Item	Description
RESET TO DEFAULT Button	The RESET TO DEFAULT button resets all the section remapping to default, where 1=1, 2=2, etc.
EXIT SETUP Button	The EXIT SETUP button will update the selected actions, close the Window and return to the Main menu.
BACK Button	The BACK button will update the selected actions, close the Window and return to the previous Menu.

9.3 Using AutoSPRAY in the Field

The following is a step by step guide to getting the RINEX AutoSPRAY up and running.

Step	Instruction
1	Start the Saturn H system by turning the vehicle ignition ON and the AutoSPRAY system attached. The system should be operational and ready to proceed as described in Section 2.
2	Check that the Power LEDs on the AutoSPRAY controller front panel is ON.
3	Turn the spray rate controller ON, all boom section switches are to be in the OFF position.
4	Turn the spray rate controller Master switch to the ON position.
5	Start to move the vehicle. The boom sections will automatically switch ON as the vehicle moves over a non-treated area and will switch OFF over a treated area which has been recorded by the system.
6	As the field is being treated, the Map Screen will show where intentional overlap has occurred and this will be green in colour as shown in Figure 9-4.
7	When the field has been completely treated, turn the master switch OFF.
8	If you wish to stop working, simply turn the vehicle ignition off to shutdown the entire system.
9	If you wish to continue working in a different field, see Section 4.3 on starting a New Field.

When AutoSPRAY is being used to control the spraying state of the boom, the overlapped areas can be viewed on the Map Screen. The overlapped areas are displayed in green, the non-overlapped areas are displayed in blue and the non-treated areas are displayed in white. To view the overlapped areas, the view must be in North Up mode.

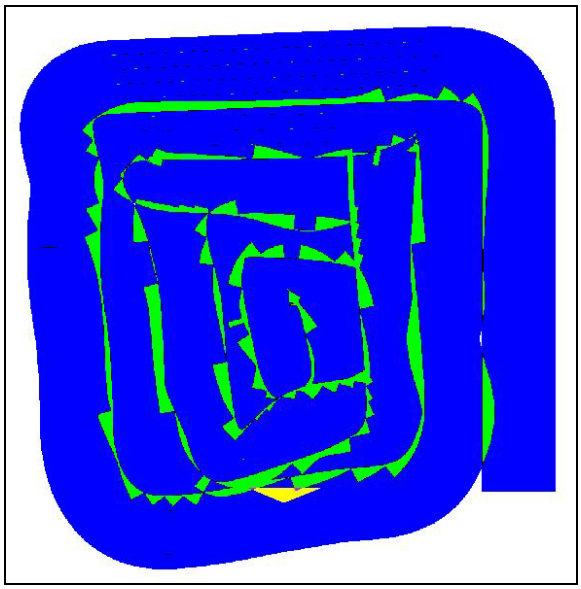


Figure 9-4: A Typical Map Screen with AutoSPRAY Overlap

9.3.1 Overriding AutoSPRAY

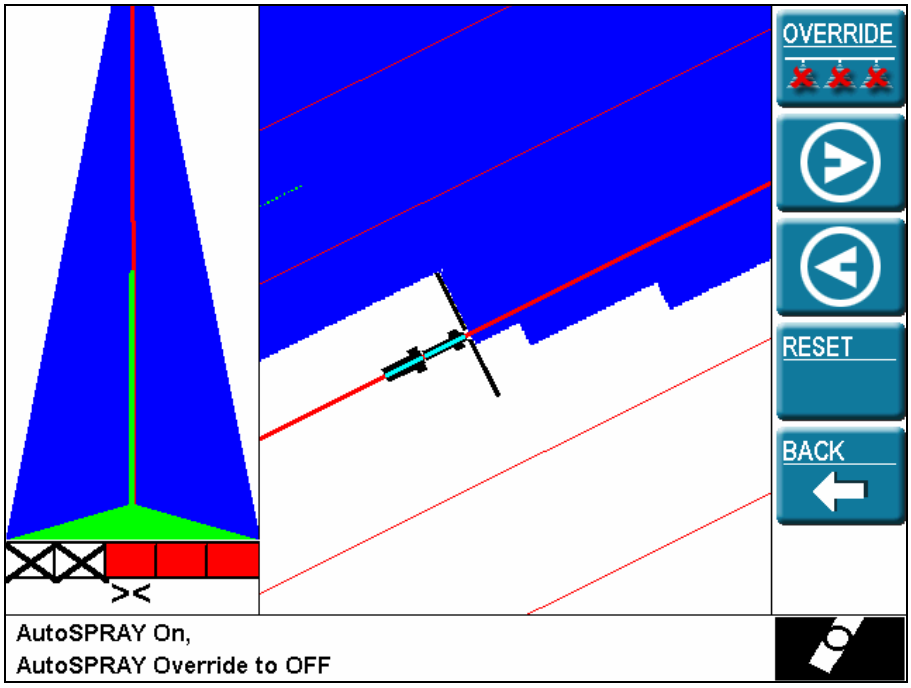


Figure 9-5: AutoSPRAY Override Menu

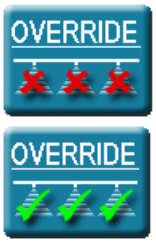
Overview: The AutoSPRAY Override allows the operator to fully override AutoSPRAY control of individual boom sections. While AutoSPRAY is being overridden GuideTRAX V3 still records exactly where treatment has been applied.

When AutoSPRAY Override is being used the states of the sections are displayed in the Virtual Road window showing whether the section is ON or OFF, and whether Override or AutoSPRAY controlled.

If Override to ON is active, then the section indicator in the Virtual Road window will display a cross with a Red background: ☒.

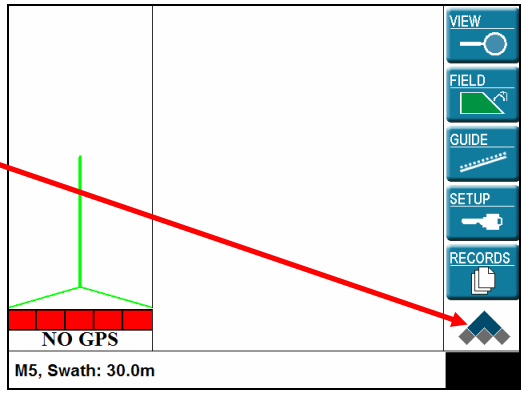
If Override to OFF is active, then the section indicator in the Virtual Road window will display a cross with a white background: ☒.

Access: **AUTOSPRAY STATUS**

Name	Button	Function
OVERRIDE TO OFF / OVERRIDE TO ON		The OVERRIDE button toggles between OVERRIDE TO OFF and OVERRIDE TO ON If Override to On is active, then sections selected using the Override Right and Override Left buttons will be set ON even if the area has already been sprayed. If Override to Off is active, then sections selected using the Override Right and Override Left buttons will be set OFF even if the area has not been sprayed.
OVERRIDE RIGHT		The OVERRIDE RIGHT button puts sections into Override state from left to right. If the section indicator in the Virtual Road window has a cross in it, then AutoSPRAY control of that section has been overridden by the operator. If the button is continually pressed until it cycles back to the same section, then it will toggle the section back to override off/on, depending on its former state.
OVERRIDE LEFT		The OVERRIDE LEFT button puts sections into Override state from right to left. If the section indicator in the Virtual Road window has a cross in it, then AutoSPRAY control of that section has been overridden by the operator. If the button is continually pressed until it cycles back to the same section, then it will toggle the section back to override off/on, depending on its former state.
RESET		The RESET button returns control of all boom sections to AutoSPRAY.
BACK		The BACK button returns to the Main Menu.

Using Override

1) From the Main menu, touch the AutoSPRAY Status button



2) Touch the Override button until it shows

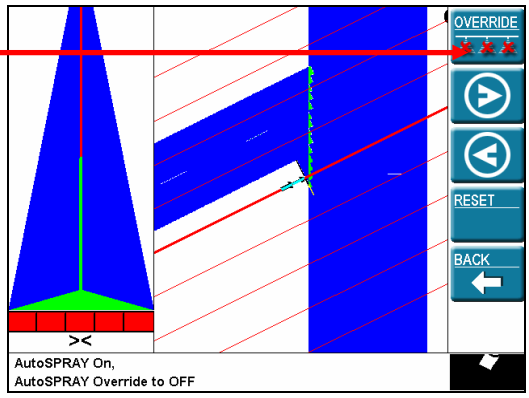
Override to ON

if sections are to be ON

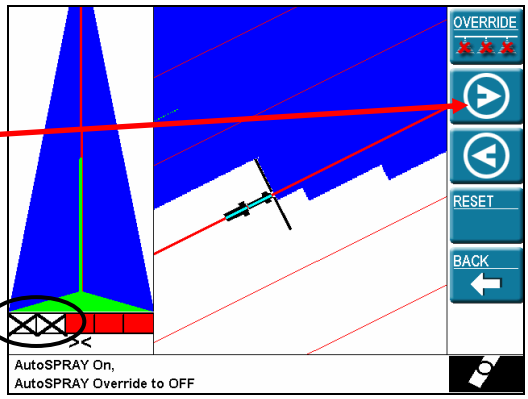
or

Override to OFF

, if selected sections are to be OFF.

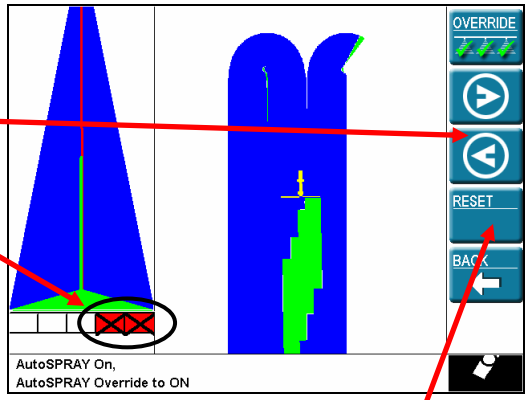


3) Touch to select sections to be overridden from left,



or to select sections from the right.

A cross in the box indicates that the section has been overridden.



Touch **Reset** to return control of all sections to AutoSPRAY.

9.3.2 AutoSPRAY Status Messages

The Status Bar at the bottom of the Map screen can display useful information when using AutoSPRAY, such as AutoSPRAY status and percentage overlapped information. To see these messages check that AutoSPRAY Info and % Overlap messages are set to be ON in **SETUP DISPLAY STATUS BAR DETAILS**. See Section 8.3.5.1 for more information about setting them ON.

If the Status Bar is not showing the required message ensure it is set to be displayed as described above and tap the status bar until the required message is displayed.

AutoSPRAY Information

Displays whether AutoSPRAY is ON, OFF or Not Available, along with if AutoSPRAY override is set to override to ON or OFF. Figure 9-6 shows AutoSPRAY is ON and any override action will force the sections to ON.

Figure 9-6: AutoSPRAY Information On The Status Bar

Percentage Overlap

The percentage of overlapped areas can be viewed as a field is being treated. This can be viewed on the lower status bar on the bottom of the map screen – see Figure 9-7 below.

Figure 9-7: The Percentage Overlap On The Status Bar

10

AutoSTEER

The AutoSTEER option is an add-on to the RINEX guidance product range that allows the guidance system to AutoSTEER the vehicle along a straight line providing optimal accuracy.

AutoSTEER is compatible with the following AutoSTEER controllers:

- RINEX AutoSTEER
- Beeline Arro

Full instructions for the setup and use of the specific AutoSTEER controllers are documented in a separate manual supplied with the controller.

The following sections briefly describe the general use and setup of the AutoSTEER system.

10.1 Setting up AutoSTEER

10.1.1 Selecting the AutoSTEER Controller

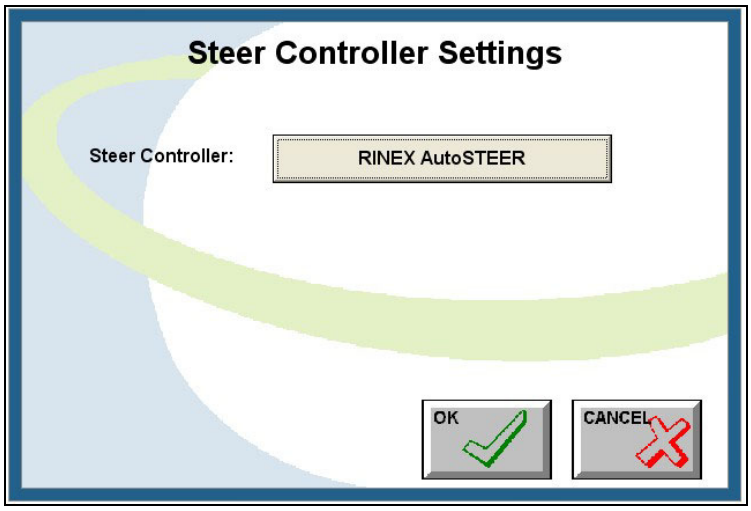


Figure 10-1: Steer Controller Settings Window

Access: **SETUP** **VEHICLE SETUP** **RIG SETUP** **NEW** or **EDIT**

1) From the Steer Controller Settings Window (see Figure 10-1) touch the **STEER CONTROLLER** Button so that the selection window is displayed.

2) Select the steer controller being used from the list and touch **ACCEPT**

3) The Steer Controller Settings Window will be displayed with the selected steer controller. Now touch **OK** **OK** **SELECT** **BACK**

10.1.2 Enabling AutoSTEER

In order to enable AutoSTEER the Steer Controller must first be selected for the current vehicle – see section 10.1.1, AutoSTEER can then be turned ON in the AutoSTEER window.

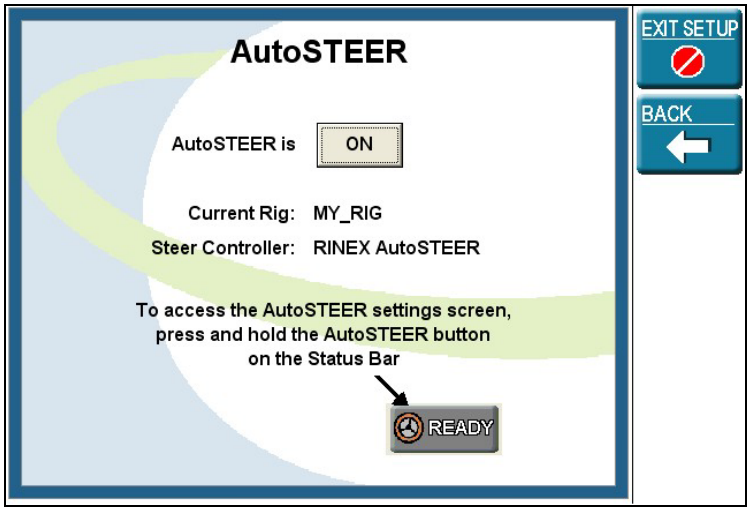


Figure 10-2: AutoSTEER Window

Overview: The AutoSTEER Window allows AutoSTEER to be turned ON/OFF.

Access: **SETUP** **AUTOSTEER**

1) From the AutoSTEER Window select AutoSTEER On by touching the AutoSTEER ON/OFF button. If the AutoSTEER Button is unavailable in Setup then the AutoSTEER option must first be registered by way of a password, see Section 6.1.

2) When AutoSTEER is turned ON, a Disclaimer window will be displayed as shown in Figure 10-3.

3) Read the information carefully and if you agree press OK, if you do not agree with this disclaimer, press cancel and the system will not activate steering. The disclaimer will be displayed every time the system is started.

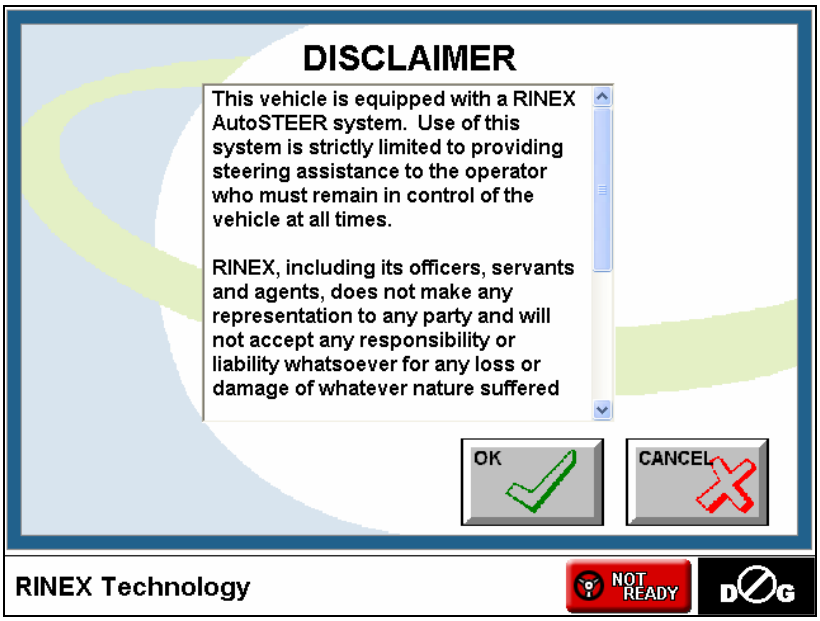

DISCLAIMER
This vehicle is equipped with a RINEX AutoSTEER system. Use of this system is strictly limited to providing steering assistance to the operator who must remain in control of the vehicle at all times.
RINEX, including its officers, servants and agents, does not make any representation to any party and will not accept any responsibility or liability whatsoever for any loss or damage of whatever nature suffered
OK
CANCEL
RINEX Technology
NOT READY

Figure 10-3: AutoSTEER Disclaimer Window

10.2 Engaging AutoSTEER

Once AutoSTEER is enabled and setup it is ready to use.

AutoSTEER is simply engaged and disengaged by pressing the AutoSTEER button on the Status Bar (as shown in Figure 10-4) after a few conditions are met.

Figure 10-4: The AutoSTEER Status Button

Before AutoSTEER will be ready to be engaged, a number of conditions must be met. (For more information on the various AutoSTEER states see section 10.3.)

1) Guideline must be set.
2) Vehicle must be travelling parallel to the guideline.
3) Vehicle must be within 3m of the guideline.
4) Vehicle must be travelling between 1 and 29 km/hr..

When all of the above conditions have been met, the AutoSTEER status button which is displayed on the right hand side of the status bar will change to READY.

When the AutoSTEER status button is pressed while displaying READY, AutoSTEER will be engaged and the vehicle will start to steer automatically down the guideline. The AutoSTEER status button will display ON when AutoSTEER is engaged.

10.2.1 Disengaging AutoSTEER

Once AutoSTEER is ON, there are various methods of disengaging it.

1 Move the steering wheel (only when Steering Wheel Cutout kit fitted).

2 Stop the vehicle or decrease speed to less than 1km/h.

3 Press the AutoSTEER status button when it is displaying ON.

4 Press Guide Off in the Guide Menu.

10.3 The AutoSTEER Status Button

When AutoSTEER is enabled, a button will appear on the status bar at the bottom of the screen to the right. This button displays the current status of AutoSTEER. There are four states of operation when in AutoSTEER mode:

Status	Meaning	Action
	If an error occurs that is related to AutoSTEER then the AutoSTEER Status button will display ERROR.	Pressing the AutoSTEER Status Button when it shows ERROR will do nothing.
	If there is no guideline set, the vehicle is stationary or too far from the guideline, the AutoSTEER Status button will display NOT READY	Pressing the AutoSTEER Status Button when it shows NOT READY will do nothing.
	When GPS is good, the guideline has been set and the vehicle is moving along the guideline then the AutoSTEER Status button will display READY	Pressing the AutoSTEER Status Button when it shows READY will activate AutoSTEER and the vehicle will begin to steer automatically. The AutoSTEER Status Button will then change to show ON.
	When AutoSTEER is active and the vehicle is steering automatically the AutoSTEER Status button will display ON	Pressing the AutoSTEER Status button when it shows ON will deactivate AutoSTEER and the vehicle will no longer be steering automatically. The AutoSTEER Status Button will change to show READY

11

FieldNET

11.1 What is FieldNET

FieldNET operates with up to four vehicles operating in the same paddock and transferring their information to all other vehicles in the paddock.

The real-time mapping functionality in the RINEX guidance system is transmitted to the other vehicles with FieldNET so all vehicles will be able to see exactly which areas have been treated, regardless of the vehicle that applied the product.

Further to this FieldNET allows guidance and AutoSPRAY function to operate with any of the vehicles in the paddock. This means that any vehicle equipped with a FieldNET unit will have accurate guidance from any treatment and the AutoSPRAY controller will automatically shut off boom sections across any part of the field that has been previously treated, regardless of the vehicle.

11.2 Setting Up FieldNET

In order to use the FieldNET option, it must be setup and configured correctly. This includes installing the radio hardware, creating a Group ID in the system, turning the function on in GuideTRAX, changing the number of Radios in the Group and changing the Radio ID to suit the user's current situation.

11.2.1 Hardware Installation

A RINEX Technology FieldNET Radio Kit must first be installed in each vehicle.

The FieldNET Radio Kit Part Number 1-0290 comprises the following:

- FieldNET Radio
- FieldNET Antenna + magnetic base + cable
- USB cable

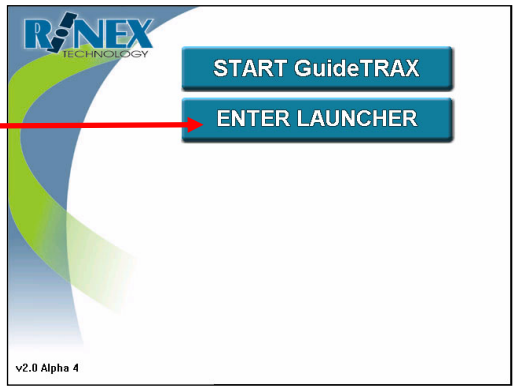
The FieldNET Radio must be installed in the cab, and the antenna must be installed externally on the vehicle, at least one metre away from the GPS Receiver/Antenna. The FieldNET Radio antenna must be screwed onto the magnetic base which has an inbuilt antenna cable, and the antenna cable must then be connected to the FieldNET radio.

The USB cable must then be connected between the FieldNET radio and the **BOTTOM** USB port on the Saturn H Interface Controller.

11.2.2 Creating and Setting The Group ID

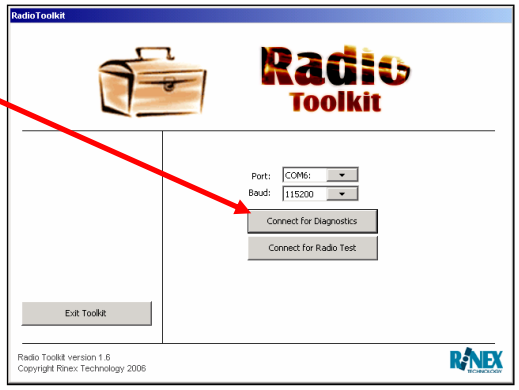
A Group ID must be created for each group of radios and then the Group ID must be entered into each FieldNET Radio in the group, as follows:

1) Contact RINEX Technology and request the Launcher Utilities password for use in step 8 below.
2) Turn the vehicle ignition off.
3) Switch the Isolation power switch on the Saturn H interface controller to the OFF position (0).
4) Start the vehicle ignition.
5) After the vehicle has started, switch the Saturn H interface controller to the ON position (-).
6) When the Launcher Startup Menu is displayed, touch **Enter Launcher.**



7) Touch **Utilities.**

8) Enter the Launcher Utilities password using the on-screen keyboard.
9) Touch **OK** on the on-screen keyboard
10) Touch **Rinex Tools** > **Radio Toolkit.**
11) **Touch Connect For Diagnostics.**



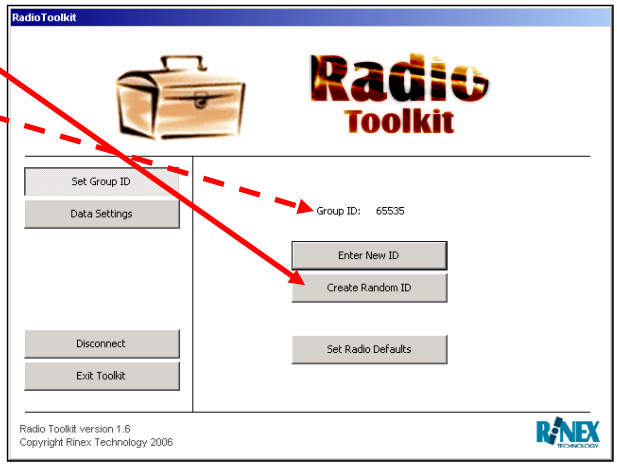
12) **This step is only to be performed for the first radio in the group to be setup**, and generates the Group ID for all the other radios in the group.

For subsequent radios in the group, go to Step 13.

Touch **Create Random ID**.

Note that the Group ID has now changed – write it down so that it can be entered in the systems of the other radios in the group.

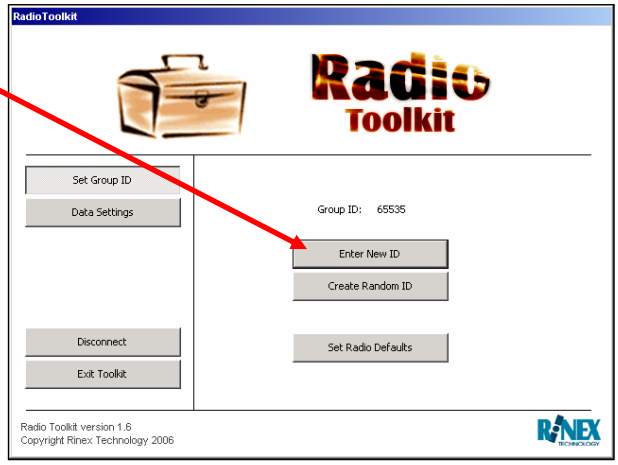
Now go to Step 15.



13) **This step is only to be performed for the second and subsequent radios in the group to be setup**

Touch **Enter New ID**

14) Using the on-screen numeric keypad, enter the Group ID obtained in Step 12 for the first radio, and touch **OK.**



15) Touch **Exit Toolkit** > **BACK** > **BACK** > **START GUIDETRAX**

11.2.3 Configuring FieldNET

In order to use the FieldNET option it will be necessary to first enter the correct password and ensure that the option is enabled as described in Section 6.1. All preceding installation and setup as detailed in Sections 11.2.1 and 11.2.2 must also have been carried out.

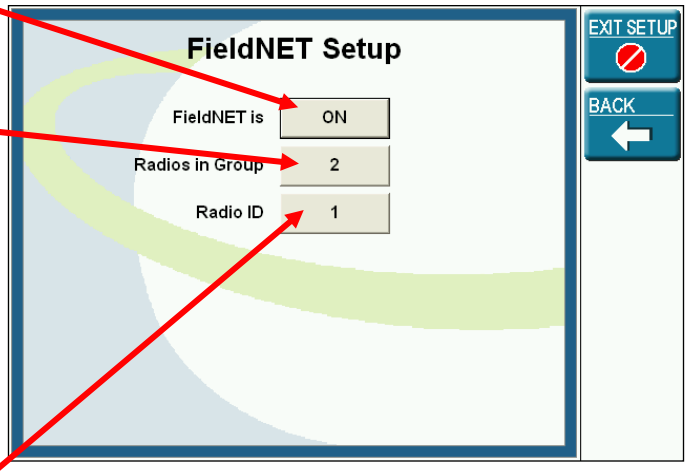
With the FieldNET option enabled on the system FieldNET can be switched ON and OFF as necessary via the FieldNET Setup window.

Access: **SETUP** **MORE** **FIELDNET SETUP**

1) Set FieldNET to ON by touching on the FieldNET ON/OFF button until ON is displayed.

2) Set the number of radios in the group by pressing the RADIOS IN GROUP button until the total number of vehicles setup with FieldNET are displayed.

   All vehicles in the group must have the same Group ID set in the radio. See Section 11.2.2.



3) The RADIO ID is used to uniquely identify each vehicle in the group to enable complete radio communication from each vehicle. Therefore each vehicle in the group must have a different number. The RADIO ID can be set by repeatedly pressing the button until the required number is displayed.

Hints and Tips:

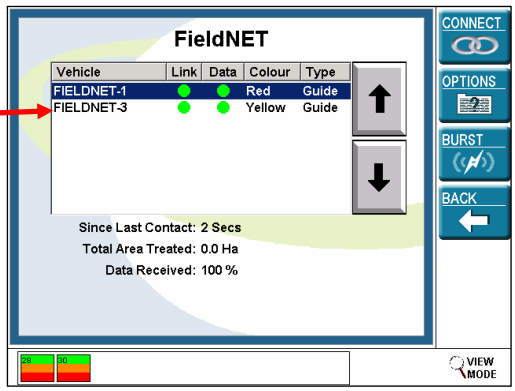
- *The minimum number of radios that must exist for FieldNET to work is two. FieldNET can be configured to operate up to a maximum number of four.*

11.3 Using FieldNET

11.3.1 Connecting To Another Vehicle In The Group

1) Touch **FIELD** **FIELDNET** to display the FieldNET window.

2) Touch ⬆ and ⬇ to select the vehicle to communicate with in the Vehicle column.



3) Touch **CONNECT** to create a link with the selected vehicle. The Link status light will turn Green.

4) Touch **BACK** **BACK**. The new setting will now take effect. See Figure 11-1

By default a Guide link type will be created between your vehicle and the selected vehicle. The Guide link type will treat the incoming information as if it was done with your vehicle, such that AutoSPRAY and guidance will work with the treatment done by the other vehicle. For more information on link types see Section 11.3.2.

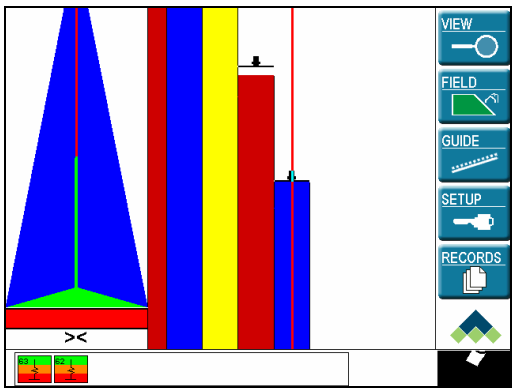


Figure 11-1 Map Screen showing FieldNET treatment done by three vehicles

11.3.2 Understanding the LINK TYPE

There are three link types available Guide, Display and Hidden. By default when a new link is setup with a vehicle the link type selected will be Guide. Each of the link types are described below.

GUIDE If the operator wishes to use information from other vehicles to help guide the vehicle, then the LINK TYPE must be set to GUIDE.

In this case the incoming treatment will be treated as if it is the same as the current treatment and therefore all of the normal features of GuideTRAX such as guidance and AutoSPRAY are available.

Guide link type is typically used where multiple vehicles are performing the same application together in the same field.

DISPLAY If the operator simply wishes to see where the other vehicle has already treated, then the LINK TYPE should be set to DISPLAY.

This allows any incoming data from the selected vehicle to be viewed as a separate layer under the user's current treatment. This setting can not be used for guidance.

HIDDEN If a link has been created with another vehicle but it is no longer desirable to see or work with the data from that vehicle then HIDDEN can be selected, which will hide any incoming data from view.

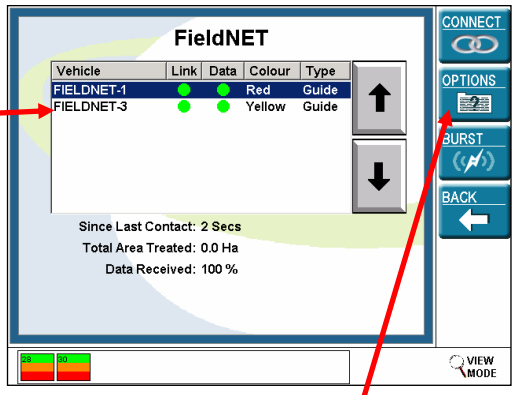
11.3.3 Changing the LINK TYPE

The LINK TYPE can be changed at any time, either before creating a link with a vehicle or after treatment has been received. To change the link follow these steps:

1) Touch **FIELD** **FIELDNET** to display the FieldNET window.

2) Touch ↑ and ↓ to select the vehicle to communicate with in the Vehicle column.

   Note that the current Link Type is displayed in the Type column.



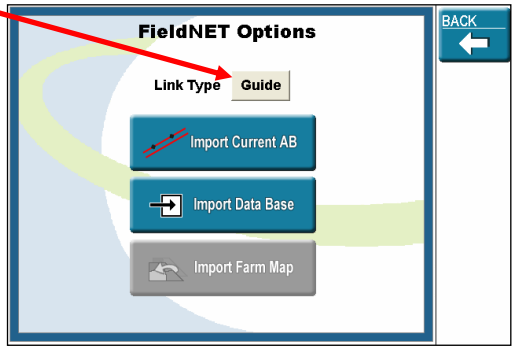
3) To display the FieldNET Options window touch **OPTIONS**

4) Repeatedly touch the **LINK TYPE** button until the desired link type is displayed.

5) Touch **BACK**.

   Note that the Link Type for the selected vehicle has changed.

6) Touch **BACK** **BACK**. The new setting will now take effect.



11.3.4 Understanding The Status Of Other Vehicles

The status of other vehicles in the group can be established by looking in the Status Bar at the bottom of the Map Screen.

Figure 11-2: The FieldNET Status bar

There will be one box for each other vehicle in the group.
i.e. if there are four vehicles in the group, three boxes will be shown where Vehicle 2 is box 1, Vehicle 3 is box 2, Vehicle 4 is box 3.

The status of each vehicle is determined by the highest colour in the box for the particular vehicle.

The colours green, orange, red or white are determined by a combination of the time since last contact with the other vehicle and the percentage of area received at last contact. The intention is that each vehicle knows where the other has been and what areas they have treated.

White indicates that there is no current link to that vehicle.

Red indicates that there may be missing data or that there has been a long time since contact with the other vehicle. In other words there is a high chance that there is an unknown area that has already been treated by another vehicle.

Orange indicates a medium level of chance that there is an unknown area that has already been treated by another vehicle. It also indicates that there has been relatively recent communication and data exchange between the vehicles.

Green indicates a low level of chance that there is an unknown area that has already been treated by another vehicle. It also indicates that there has been recent communication and data exchanged between the vehicles.

When the antenna symbol appears (as shown in the middle box in Figure 11-2), it indicates that there is communication with the particular vehicle represented by that box.

12

The Launcher

The Launcher is a utility that is pre-installed onto the Saturn H systems. It is a maintenance program that is used to perform various functions such as resetting the system, upgrading software and accessing advanced tools.

In normal operation, the Launcher program will not be seen. The system will automatically start GuideTRAX V3 when the system is activated.

12.1 Opening the Launcher

When it is necessary to open the Launcher program to perform any of the Launcher functions, the following steps must be taken.

1) Turn the vehicle ignition OFF.

2) Power down the Saturn H interface box by turning the IPS on the interface box to the OFF (0) position.

3) Start the vehicle ignition.

4) After the vehicle has started, power up the Saturn H system interface box by turning the IPS on the interface box to the ON (-) position.

5) The Saturn H system will now start up displaying the following screens. As the system is starting up, it will display the two screens shown in Figure 12-1, and Figure 12-2 below:

Figure 12-1: The RINEX First Startup Screen

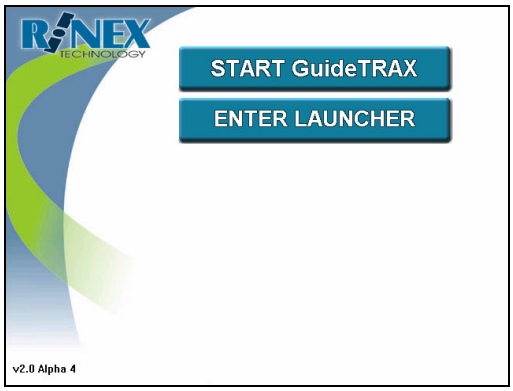


Figure 12-2: The Startup Screen of the Launcher

Hints and Tips:

- *The system will revert to the normal starting procedure after it is shutdown.*
- *The Launcher can be navigated using a standard PS2 Keyboard connected to the KDB port on Saturn H Interface box. To use a keyboard each Launcher button position is assigned a function key, F1 though to F6. e.g. F1 is the top button, F2 is the second button down, F3 is the third, and so on.*

12.2 Using the Launcher

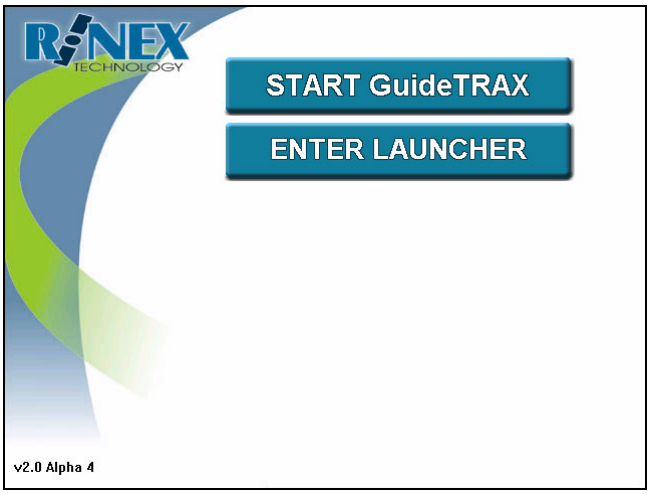


Figure 12-3: The Startup Window of the Launcher

Overview: The Launcher buttons and their functions are listed below:

Item	Description
Start GuideTRAX	The Start GuideTRAX button will close the Launcher program and open GuideTRAX V3.
Enter Launcher	The Enter Launcher button will open the Launcher Main Window. See Section 12.2.1 for more details.

12.2.1 Launcher Main Menu

Figure 12-4: The Launcher Main Menu

Overview: The Launcher buttons and their functions are listed below:

Item	Description
START GUIDETRAX	The START GuideTRAX button will close the Launcher program and open GuideTRAX V3.
UPGRADE SOFTWARE	The UPGRADE SOFTWARE button will connect to the USB and then proceed to copy the latest software to the system. A message seeking confirmation will be displayed before any files are copied.
SYSTEM TOOLS	The SYSTEM TOOLS button will display the System Tools window containing repair and reset options that can be selected. See section 12.2.2 for more details.
UTILITIES	The UTILITIES button will open a window from which a password can be entered. The correct password must be entered before the Utilities menu can be accessed. Please call RINEX if you wish to access the Utilities menu. The Utilities menu contains access to various troubleshooting utilities. See Section 12.2.3 for more details.

Item	Description
CALIBRATE	The CALIBRATE button allows the touch screen to be calibrated. The appropriate calibration program for your touch screen will be opened when the Calibrate button is tapped. Follow the onscreen instructions of the calibration program to calibrate your touch screen.
RESTART SYSTEM	The RESTART SYSTEM button will restart the system.

12.2.2 System Tools

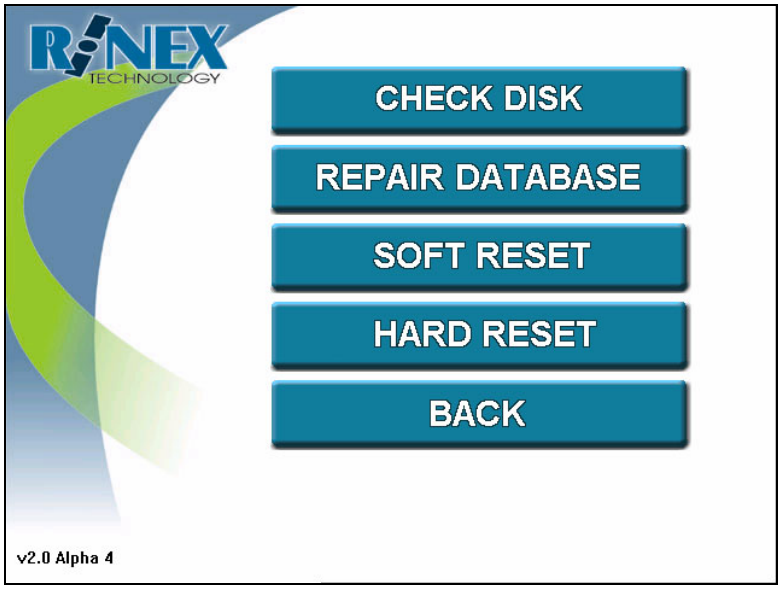


Figure 12-5: The System Tools Menu

Overview: System Tools allows diagnostic and database repair functions to be run and also allows the system to be reset so that the factory settings are restored.

Item	Description
CHECK DISK	The CHECK DISK button checks the disk for errors, repairs any errors, reports the results to the screen.
REPAIR DATABASE	The REPAIR DATABASE button runs the Repair Database function.
SOFT RESET	The SOFT RESET button resets certain system settings, deletes all data from the nine paddock Virtual Memory and restarts the system. All GuideTRAX V3 settings will remain after a soft reset.
HARD RESET	The HARD RESET button will restore the factory settings and restart the system. All data that has been recorded will be deleted and all settings will be set back to the default factory settings.
BACK	The BACK button will return to the Launcher Main window.

Hints and Tips:

- *You will be asked to confirm the actions of Soft and Hard Reset*
- *GuideTRAX V3 settings (e.g., vehicle settings) can be restored after a Hard Reset if they have been previously backed up. See Section 12.2.6*

12.2.3 Utilities

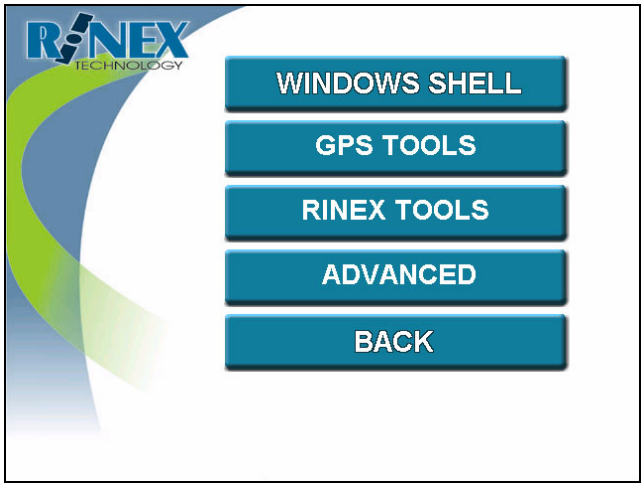


Figure 12-6: The Utilities Menu

Overview: Utilities allows diagnostic and configuration functions to be run.

Item	Description
WINDOWS SHELL	The WINDOWS SHELL button will display the Windows Shell interface from which commands can be entered using a keyboard.
GPS TOOLS	The GPS TOOLS button displays the GPS TOOLS menu to allow interrogation and configuration of selected GPS receivers.
RINEX TOOLS	The RINEX TOOLS button displays the RINEX Tools menu to allow the system date/time to be set, database upgrades, hardware diagnostic and communications utilities to be run.
ADVANCED	The ADVANCED button displays the Advanced Utilities menu to allow system backup files to be created and restored, screen drivers to be changed and log files to be exported.
BACK	The BACK button will return to the Launcher Main Window.

12.2.4 GPS Tools

Figure 12-7: The GPS Tools Menu

Overview: GPS Tools allows selected GPS receiver utilities to be run.

WARNING: The TOOLKIT button when connected to any receiver OTHER THAN Ag114, 3000L, G12 or GEM could cause the receiver to lose its settings.

Item	Description
TERMINAL	The TERMINAL button starts a terminal program so that incoming serial data can be viewed.
AGREMOTE	The AG REMOTE button starts the AG Remote program for configuring Trimble and OmniLite receivers.
TOOLKIT	The TOOLKIT button will open the Toolkit program for used to configure and check the status of some GPS receivers.
JD STARFIRE ITC	The JD STARFIRE ITC button will start the John Deere Starfire ITC Configuration utility (suitable for configuring only Starfire ITC receivers).

Item	Description
JD STARFIRE	The JD STARFIRE button will start the John Deere Starfire Configuration utility (suitable for configuring only Starfire 2 receivers).
BACK	The BACK button will return to the Utilities Menu.

12.2.5 RINEX Tools

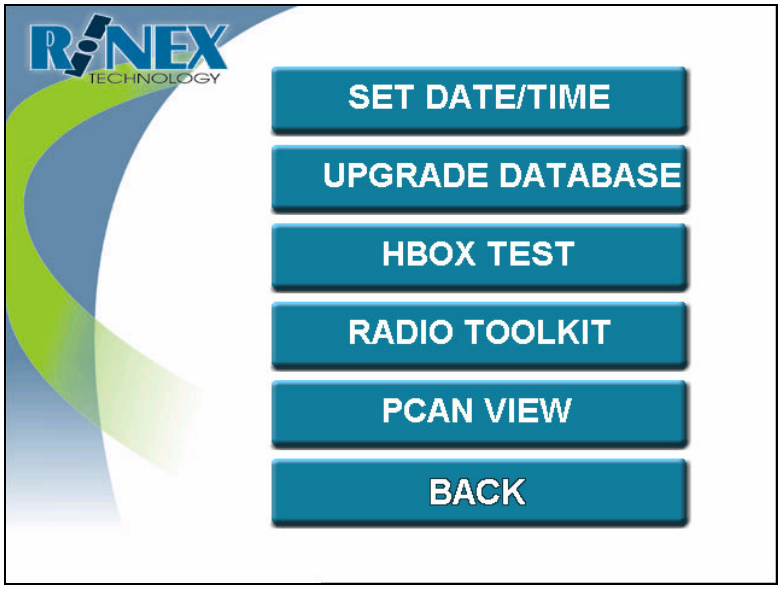


Figure 12-8: The RINEX Tools Menu

Overview: The RINEX Tools menu allows various RINEX tools to be used.

Item	Description
SET DATE & TIME	The SET DATE & TIME button displays the Set Date and Time window, allowing the correct date and time to be set.
UPGRADE DATABASE	The UPGRADE DATABASE button displays the Upgrade Database window, allowing the GuideTRAX database version to be updated.
HBOX TEST	The HBOX TEST button will start the Test Box set of testing functions which test all input and output interfaces on the H Box.
RADIO TOOLKIT	The RADIO TOOLKIT button starts the Radio Toolkit to enable the GroupID for FieldNET to be configured.
PCANVIEW	The PCANVIEW button starts the PCANView utility to allow display of CANbus information.
BACK	The BACK button will return to the Utilities Menu.

12.2.6 Advanced Utilities

Figure 12-9: Advanced Utilities Menu

Overview: The Advanced Utilities Menu enables backup files of software settings to be created and restored, screen drivers to be changed and error log files to be exported.

Item	Description
CREATE BACKUP	The CREATE BACKUP button creates a backup of GuideTRAX settings (e.g., vehicle settings). If there is already a backup then a warning message will be displayed for 12 seconds, then the button will have to be pressed again to overwrite the old backup.
RESTORE BACKUP	The RESTORE BACKUP button restores the backup created by Create Backup. A warning message will be displayed for 12 seconds, and then the button will have to be pressed again to restore the backup and overwrite the current settings.
LOAD RNX SCREEN	The LOAD RNX button changes the screen drivers to the RINEX touch screen. A warning message is displayed for 12 seconds, and then the button will have to be pressed again for the screen drivers to be changed to the RINEX Screen.

Item	Description
LOAD DATALUX	The LOAD DATALUX button changes the screen drivers to the Datalux touch screen. A warning message is displayed for 12 seconds, and then the button will have to be pressed again for the screen drivers to be changed to the Datalux Screen.
EXPORT LOG FILES	The EXPORT LOG FILES button exports any system log files to the USB drive.
BACK	The BACK button will return to the Utilities Menu.

Hints and Tips:

- *Only ever backup settings if it is certain that all current settings are good and are not causing any problems.*
- *Restoring settings to a different version of software from which they were backed up is not recommended as unexpected problems may occur*.

13

APPENDIX

APPENDIX 1 Terminology

Phrase	Description
AutoSPRAY	AutoSPRAY is an optional extra in the RINEX guidance product range that allows the Saturn HT and HR systems to control the spraying state of the boom as the vehicle drives over a treated/non-treated area.
AutoSTEER	AutoSTEER is an optional extra in the RINEX guidance product range that allows the Saturn HT and HR systems to steer automatically along a straight line using parallel guidance providing optimal accuracy.
Boom Settings	Boom details such as the number of boom sections and the width of each section.
Button	A symbol representing a function shown on the touch screen which allows the input of data or performs a function when tapped.
Current Field	The current selected field in memory (chosen from the Memory window). The current field is where all of the treatment data will be stored when treatment is commenced.
DGPS	Differential Global Positioning System. Provides more accurate positioning information where corrections are applied to the basic GPS position.
External Button Box	An optional device that is connected to the USB port of the Interface Box. This device consists of four programmable buttons that can be used with the GuideTRAX program to perform functions without having to touch the screen.
GPS	Global Positioning System. Provides basic position information to the system.

Phrase	Description
Guideline	The red line displayed on the map screen. This line may have been created by either lock or parallel guidance.
Guide Points	A set of two positions used to compute the set of parallel guidelines when using parallel guidance.
GuideTRAX V3	The software program produced by RINEX which runs on the Saturn H system.
Launcher Program	The utility program produced by RINEX which is installed on the Saturn H system and is used to run GuideTRAX and maintain the system.
Lightbar	An LED device that is connected to the lightbar port on the Saturn H system that displays directional information to the operator which is typically mounted in the line of sight of the operator.
Link	Component of the vehicle measured from one pivot point to another.
Link Settings	Link details such as the number of links, the link distances and the axle distances.
Lock Guidance	The type of guidance used when working the field in either a race track or contour method.
Map Screen	The area of the screen displayed to the left of the menu buttons which displays the treatment data, the vehicle position marker and the guideline.
Menu	A group of related buttons shown to the right of the touch screen display which allow access to other menus or functions.

Phrase	Description
Multi Section Boom Interface (MSBI)	A device that is connected to the controller port on the Saturn H system that provides an interface to the spray controller. The MSBI allows GuideTRAX to read the current status of each boom section on the spray controller and displays the status on the screen along with the treated area for each section.
Parallel Guidance	The type of guidance used when working the field in an up and back method. A set of parallel guidelines will be drawn on the screen one swath width apart.
Saturn Hardware	The hardware system installed in your vehicle cabin which is used to run GuideTRAX V3. That is the Interface Box, GPS antennae and can include any connected device, cables, connectors and the touch screen.
Saturn H Interface Box	The Interface Control Box. The main component of the Saturn H system that provides an interface to other components of the system. It contains the PC board and is used to connect components such as the touch-screen and the GPS receiver.
Swath Width	The total width of the boom/implement.
Tap	To touch the touch screen once with your finger at an intended position on the screen. Care must be taken to tap the screen gently.
Toggle Switch	A device that is connected to the controller port on the Saturn H system that allows the treatment to be turned on or off without having to touch the Vehicle Icon on the screen.
Touch-Screen	The display device which shows the progress of your operation and accepts commands by tapping buttons on the screen.

Phrase	Description
Treatment	Refers to the spraying state of the boom. If treatment is on, then the spraying state of the boom is on and treatment data will be recorded in the current field. If treatment is off, then the spraying state of the boom is off and treatment data is not recorded.
Treatment Data	The position information stored in a field when treatment is on. The treatment data is represented on the screen as a blue shaded area.
Unit	The measurement unit used to evaluate mass, volume, area, distance etc (E.g. Kilogram, Tonne and Litre)
USB Storage Device	A device that is connected to the USB port on the Saturn H system that is used to transfer files to and from the system.
Vehicle Icon (VEHICLE ICON)	The vehicle symbol displayed on the map screen which represents the vehicle as it moves around the field.
Virtual Road (VR)	The VR is displayed to the left of the map screen. It is used to display the projected road that must be taken to follow the current guideline.

APPENDIX 2 SATURN GUIDANCE SYSTEMS

The Saturn H series can be easily identified by its compact interface box as shown in Figure 13-1

Figure 13-1: The Saturn H Interface Box

The physical properties of the Saturn H series interface box are as follows

230 (w) x 65 (h) x 190 (d)

1200gm

APPENDIX 4 SYSTEM MESSAGES

Message	Probable Cause	Try This…
Could not find lock! Move and try again.	Vehicle is too far away from the previous track. Lock method may be set to 'Left Only' or 'Right Only'.	Move within 1 swath widths of the track from which you want to follow. Check lock direction setting from Guide Setup (Section 5.6.2).
Points too close! Move and try again.	Parallel Point B was set too close to Point A.	Move the vehicle and set Parallel Point B again.
Key line already defined! Delete line?	A parallel line has already been set. System checks to make sure you want to delete the parallel line when you try to create a new one.	Press Ok if you wish to delete the current parallel line and create a new one. Press cancel if you want to keep working on the current parallel line.
Could not open port:	Another program or device is occupying the communications port.	Try closing/disconnecting the device. If there is nothing that appears to be occupying the port, try restarting the computer.
Please stop treatment before going to field menu	Treatment was on when the field menu button was pressed. When in the FIELD menu the GPS information is ignored so treatment cannot be recorded while in the field menu.	Turn treatment off and press the Field menu button again.

Message	Probable Cause	Try This…
This unit is not registered!	The system has not been registered for use.	Please contact RINEX for further information.
File Copied Successfully!	You have just saved a file and it has been saved to the transfer directory with no problems.	No action necessary.
Please restart system for changes to take effect:	System setting was changed and system must be restarted for the change to take effect.	Restart the program by pressing turning the ignition off and then turn the ignition back on.
Warning: Disk space is low.	Too many files have been saved and disk space is low.	Delete some files from Transfer directory located in the C drive.
Error No disk space available	Too many files have been saved and there is no disk space remaining.	Delete some files from the Transfer directory located in the C drive.
Error: The current position is invalid, (No valid GPS)	A point or treatment was attempted to be recorded while there was no GPS or the vehicle has not moved.	Move and try again or wait for good GPS signal to return.
Warning: All data in the current field will be lost. Do you wish to proceed?	A field has been loaded into the current field and the current field must be cleared for this to occur.	If you wish for the selected field to be loaded in to the current field, press ok. Otherwise, if you wish to load the selected field into a different field, press cancel, open the correct field and then select the field for loading again.

Message	Probable Cause	Try This…
Message #1041. Warning: Before starting a new season make sure that you have emptied all tanks and that all treatments for the current season have been completed. Do you wish to continue?	The NEW season button was touched in the Season Setup Window.	The tank must be empty and all M1 to M9 memory slots in Field Memory must be empty. Either clear all Field Memory slots by restarting or archiving each field.

APPENDIX 5 TROUBLESHOOTING

Problem	Probable Cause	Try This…
System does not draw a "track" behind the vehicle	Treatment is not switched to the ON state	Check in Switch Setup (Section 6.5) to ensure the correct method of switching (toggle, touch or external) is selected.
Guide line is drawn in wrong place	An offset, or overlap value has been incorrectly entered.	Ensure overlap and offset values are correctly entered in Guide Setup
Calculated total area is incorrect	Did not return to original start point after one complete lap.	Area will not be calculated unless field is restarted and perimeter is recorded.
Calculated treated area is incorrect.	Swath width is set incorrectly.	Restart field and change swath width to correct value (Sections 3.3.1 and 4.3).
Toggle switch or boom controller will not turn spraying on/off	Incorrect controller is selected	Change controller via the Rig Setup. If unable to change controller, restart field.
Paddock not recognised and previous treatments absent	GPS has not been turned on before the vehicle started moving.	Stop the vehicle, turn on the GPS and start moving the vehicle.
Error while writing to disk.	There has been an error while writing to a file or saving a file.	Try saving or restarting the field again.
Error reading file:	There has been an error in the file you are attempting to use.	Restart the field via the Field menu (Section 4.3).

Problem	Probable Cause	Try This…
Comm Error: Check cable connection.	There is a problem in the cabling or a cable has become disconnected.	Check that all cables are inserted correctly.
Range Error:	A value has been entered that is too large or too small	Enter another value that is within the range that is displayed in the error message.
Error Copying File:	An error occurred when a file was loaded.	Try restarting the current field and reload the file. If it occurs again, the file is corrupt. Please delete the file to avoid further complications.